TO THE READER.

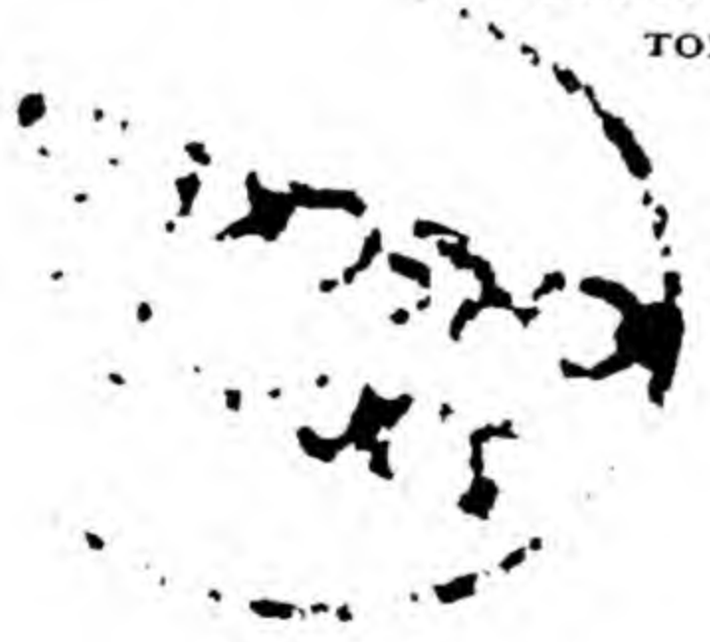
KINDLY use this book very carefully. If the book is disfigured or marked or written on while in your possession the book will have to be replaced by a new copy or paid for. In case the book be a volume of set of which single volumes are not available the price of the whole set will be realized.

A NEW FUNDAMENTALISM

MACMILLAN AND CO., LIMITED
LONDON · BOMBAY · CALCUTTA · MADRAS
MELBOURNE

THE MACMILLAN COMPANY
NEW YORK · BOSTON · CHICAGO
DALLAS · ATLANTA · SAN FRANCISCO

THE MACMILLAN COMPANY
OF CANADA, LIMITED
TORONTO



A NEW FUNDAMENTALISM

By

JAMES MAXWELL HENRY, M.A.

FELLOW AND TUTOR, TRINITY COLLEGE, DUBLIN.
HONOR LECTURER IN MATHEMATICS, UNIVERSITY OF DUBLIN.
LECTURER IN EDUCATION, UNIVERSITY OF DUBLIN.
EXAMINER IN LANGUAGES AND IN PSYCHOLOGY, ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS, IRELAND.
DIPLOMA WITH DISTINCTION IN EDUCATION, UNIVERSITY OF OXFORD.

MACMILLAN & CO., LIMITED
ST. MARTIN'S STREET, LONDON
1934

Printed in Ireland

PREFACE.

It is becoming increasingly difficult to keep pace with the advance of knowledge. And to reconcile opposing points of view peculiar to the different sciences is almost a superhuman task. There has gradually grown up a more or less coherent body of knowledge accepted by most scientific men and presupposed in first class scientific journals like "Nature." But this does not cover the whole field. There is a realm of opinion, a borderland between knowledge and belief. At present almost every man, in addition to the body of generally accepted truth, permits himself a private creed. But what is believed by A is deemed the last word in absurdity by B, C and D.

It has for a long time appeared to me that there is some absolutely central and pivotal secret which is just eluding us. As a result of this conviction I venture to present a theory which seems to be somewhat less one-sided and to fall foul of fewer acknowledged facts than the generalisations hitherto reached. Most modern theories seem to have been developed in the interest of one particular science or group of sciences. Only by a *tour de force* can facts coming from other sources be explained. By some writers this *tour de force* has been

actually attempted. Others frankly adopt the attitude, "If these facts conflict with my theory, so much the worse for the facts!" The present theory endeavours to explain as much as possible and to explain away as little as possible.

In the following pages I have tried to observe two rules. First, to do justice to recognised fact. Second, to regard every fancy which human beings have entertained as entitled to serious consideration. Every such fantasy is objective, both as involving material particles of the brain, and as connected with an existent condition of the outside world. It demands a thorough-going investigation and explanation and no casual dismissal as a transparent absurdity. The 'explanation' of religious feelings and aspirations—some of the deepest constituents of our mental self—as trivialities born of savage fears and dream misinterpretations has always seemed to me deplorably weak and a clear indication of the bankruptcy of Victorian 'rationalism,' exhibiting, as it does, the above-noted tendency to get rid of inconvenient facts. I have myself aimed at resisting the temptation to select only facts confirmatory of the general theory. I have preferred rather to modify the theory again and again until the conflict is almost entirely with well ascertained facts.

For the theory itself I claim, of course, no originality. Were it in any great measure original I should not be presumptuous enough to advance it as true. It seems to be in essence merely the

explicit statement of the view which tradition, ancient wisdom, modern humanism, poets and philosophers in all ages, have implicitly held. Its novelty consists merely in a certain measure of boldness in daring to assert that the pretty mental constructions of poetry, philosophy and religion are in some sense literally true. To compare small things with great, it is not unlike the hardihood of Einstein in daring to believe that the mental constructions of Riemann's geometry were applicable to the realities of the physical world.

The scientific world-view fails in two respects. First—as regards pure theory—it presents a very inadequate picture of past history. To use a well-worn metaphor, it does not rise above the description of a national pageant which one might expect from a traffic policeman. Second, it fails in some way to get down to the realities of practical life.

Personally I have a great respect for the ' fundamentalism ' of the past. It provided a good working creed. But it has completely broken down. Were this not so I should hesitate to criticise even the most naïve credulities of popular theology. It is so pathetically easy to knock down and so painfully difficult to build up. So I have endeavoured to be as far as possible constructive, as well as to lay afresh the foundations. It is for that reason I have ventured to call my creed a new fundamentalism. I realise that we must at all costs recover the stern and yet hopeful attitude to life characteristic of the best of our forefathers. But this attitude must be based on a reasonable foundation, proof against any

rational attack. We must guard equally against intellectual unsoundness or obscurantism, and moral lightness, decadence or pessimism.

I trust that much indulgence will be extended to one who thus attempts the supremely difficult but imperative task of restoring the sane and balanced attitude to life which has been temporarily obscured during the past 100 years by the obsessions of the specialist. During a busy life I have had leisure to consider only a few facts, and of these few to incorporate only a small number in the present work, so that the evidence here presented is necessarily of a provisional and almost skeleton nature. I have tried, however, to cull these facts from diverse branches of human knowledge, allowing no more weight to sciences in which I am interested than to those which I personally dislike. The merit, if any, of the discussion lies in the cumulative nature of the argument. On account of the peculiar position occupied by mathematics and mathematical physics and the astonishingly rapid advance in recent years of the latter science I have had to begin with a chapter which is an unattractive blend of these with metaphysics. This the reader without a special bent for such abstractions would do well to omit and proceed to slightly more alluring fields.

It may be, of course, that the thesis here presented is radically false. It may be merely one of those insidious delusions which have overtaken more powerful intellects than mine. Yet if its very untruth be in any degree provocative or

stimulate more penetrating enquiry into fundamental matters, or if truth be served even by its complete refutation, then your author will have had his reward.

I must thank my wife and a number of my colleagues in Trinity College, Dublin, for valuable criticisms and suggestions.

J. M. HENRY.

33 TRINITY COLLEGE,
DUBLIN.

October, 1933.

CONTENTS.

CHAPTER I.

INTRODUCTION.

It is at present a grave scandal that while we have accumulated an enormous amount of exact knowledge in special departments of science our general scientific outlook is, perhaps, less satisfactory than was that of Plato or Aristotle. We know how a centipede moves its somewhat less than a hundred legs, and how our solar system assumed its latest form. But of the origin of life, the mystery of pain and death, the ultimate fate of the individual and the race, we have little to add for nearly two thousand years. And, what is more, the solution which civilised peoples had been continuously elaborating for twenty centuries has in the last eighty years been definitely rejected by men of science. Great thinkers of the past, such as Augustine, Thomas Aquinas, John Calvin, fused Greek and Hebrew ideas into a comprehensive world picture into which every known detail could, by dint of a little forcing here and there, be made to fit in a truly marvellous way.

But, starting in the year 1831, Charles Darwin took a voyage round the world. He dug up certain

plants. He gave certain explanations of what he had observed. And henceforward all previous theories are worthless, the tens of thousands of volumes filled by the labour of divines and philosophers have become so much waste paper.

Take the early Victorian age in England. It was a time of mental vigour, of economic advance unparalleled in history, of commercial and philanthropic enterprise. It was a time of peace and prosperity, of optimism and hope. It probably had men of wider vision than we have to-day. Yet according to our current science it thought all wrongly on the fundamentals. Its cheerfulness was based on self-deception. Its truth was founded on a lie.

Now first of all it does seem arrogance on the part of us moderns to exclude all knowledge save that of the past 100 years. We are worse than the zealots of a past generation who restricted inspiration to the period covered by the canonical sacred writings. And next it is an obvious reflection that if the wise men of 1833 were wrapped in delusion soon to be exposed, those of 1933 may be in no better position. But it is just as hard for us to rid our minds of the scientific fog of the present century as it was for the Victorians to rid their minds of the religious fog of the nineteenth. Two groups of religious thinkers have, however, consistently declined to accept the scientific re-orientation of mental attitude. First, there are the leaders of the largest Christian body, the Roman Catholic Church, who definitely refuse to

countenance modernism. And secondly there is the small and dwindling minority of Protestant Christians who were recently still strong enough in certain parts of America to enforce the heresy trial of a lecturer in biology. And the professed philosopher free from religious bias has been driven into an almost untenable position, where he maintains himself precariously by a somewhat curious expedient. He replaces the ancient system of truth by a novel system of ' values.' As if anything could be valuable without being true! According to him the ecstatic fervour and sublime faith of medieval religion, the nobility of the pagan world-view, when weighed in the balance of truth are doubtless found wanting. Still they have a moral dignity and an emotional appeal which atone for their lack of logical soundness.

The poet or artist of whatever kind feels a similar difficulty. The things nearest to his heart find no place in the scheme of things devised by the man of science. He must needs, therefore, dwell in a world apart. The absurdity of the whole position is not inaptly characterised in an epigram due to a distinguished colleague that religion (and, no doubt, also poetry and philosophy) gives untrue answers to important questions, while science gives true answers to unimportant questions.

That even the man in the street is dissatisfied with the purely scientific world-view based on verifiable fact is shown by the popularity of creeds and cults, ancient and modern, whose fundamental tenets are incompatible with scientific orthodoxy,

Christian Science flatly repudiates the authority of psychology and pathology. Spiritualism affirms the separability of matter and intelligence. Theosophy gives form, abode and name to many wonderful entities at which the man of science shakes his head. And the world to-day is honeycombed with ancient and picturesque cults which in their ritual keep alive non-scientific beliefs.

During the last 100 years thousands of books have been written to reconcile religion and science, but the two have not been reconciled. There is not the slightest use in saying that they do not contradict one another. The simple fact is that they do. Our man in the street is, of course, eclectic. He knows both are good and he uses both, without bothering too much about consistency. But, whatever contentment this may bring to the practical person, the thinker cannot be satisfied.

Some years ago it was the custom to resolve the discord by saying that science and religion spoke different languages. (But two men may contradict one another though one speaks in English and the other in German.) Now they speak more or less the same language and the discrepancy is more painfully apparent. There is no doubt whatever that in certain positive and definite respects science does absolutely and unequivocally contradict theology (that is the systematic theology of the past as distinguished from its somewhat spineless modern liberal successor). Either there was a Fall (one or more) or there was not. On the

one side stands science, on the other past Catholic and present Roman Catholic orthodox theology plus a widely disseminated though somewhat vague theory of a Golden Age.

In general the unhappy position to-day is that there is an impassable gulf fixed between the demonstrable truths of science and the intuitive truth of religion (and poetry), which latter on the existing scientific theory turns out not to be truth at all, but a pious albeit delightful fraud. There are actually two groups of sciences—the genuine ones, which are wresting secrets from nature, and the others, pseudo-sciences (historical and descriptive) which investigate the beliefs of mankind in the past, however crude and foolish these may have been. The perennial interest in religion has shifted to the origin of ritual and dogma, research into which generally proves the most powerful solvent of orthodox faith. Further, children learn about Biblical miracles, as they learn mythological wonder stories, merely to free the imagination, to teach the learner, not what is or what has been, but what might be if only the world were a realm of delightful romance instead of the dull prosaic place we know it to be.

The sincere thinker is faced with an agonising alternative. He can't reject theology completely. It means the uprooting of too much that he holds dear. He can't destroy church catechisms, because he will ultimately be destroying churches. And the direct experiment being tried in Soviet Russia is not altogether reassuring. In any case it has been

tried out of motives of class jealousy and enmity against the church rather than from a passion for pure truth. Personally I have no desire to see a sector of the anti-God front established in England.

On the other hand, there is no religion higher than truth. And no man or woman studying even superficially the available evidence can doubt that the existing types of life are the outcome of a long process of continuous development in the past. So our thinker has often comforted himself in his theological bereavement with the reflection that he has now a guarantee of steady upward progress. He may even find a spiritual home in the communism whose sole religion consists in aiding this evolutionary process in promoting the betterment of humanity. But in his moments of depression he may doubt whether the upward movement is operating at present at all. He may be tortured by a suspicion that, just as orthodox religion has been declared to be dope for the ignorant, so orthodox evolution may turn out to have been dope for the slightly more sophisticated.

From at least four books the story of our race's past may be read.

First, there is the record of the rocks, the evidence of geology and palaeontology.

Second, there is the evidence of anatomy and physiology, and of embryology in the theory of recapitulation. Ontogeny recapitulates phylogeny.

Third, there is the evidence of psychology. The mind, like the rocks, is stratified. Some strata have sunk below the surface of consciousness, but

from natural causes or as the result of delicate experimentation the upper or later layers can, just as in the parallel geological case, be often removed and the lower or earlier laid bare.

Fourth, there is the evidence of pre-history, tradition, myth, folklore, books considered sacred, early art. I might call this the evidence of archaeology, using the latter word in a very wide sense.

Fifth, in addition there is a mass of indirect evidence from sciences like mathematics and mathematical physics, and from religious beliefs and metaphysical speculations.

What is the current view regarding the value of these five?

The first is at present incomplete, even fragmentary. Still, as Sir Arthur Keith said at the 1931 meeting of the British Association, if geological records accumulate during the next 50 years at the same rate as they have during the past 50 years, our knowledge of man's origin will be based not on reasoned inference but on ascertained fact.

The second provides a multitude of facts, but the theory of recapitulation cannot be accepted unless in a considerable modified form. There have been acute differences of opinion between embryologists and palaeontologists. Still there is a fair measure of agreement among experts.

In the third place the evidence from psychology has not been evaluated or brought into relation with that already considered.

In the fourth place the evidence from pre-

history has been considered to possess no value at all. Modern conclusions have flatly contradicted without scruple the unanimous voice of tradition. This is, perhaps, a natural reaction against an earlier condition of affairs when all that tradition asserted was uncritically accepted and blindly swallowed.

Now I shall try to show that although the facts adduced by geology and biology are unchallengeable the inference which has been drawn is incorrect, and that the evidence of psychology and pre-history agree in supporting quite a different inference, so that in future we shall attach much more weight to tradition than has been customary during the transitional period of emergence from the dogmatism of a century ago.

In the fifth place the conclusions drawn from such opposite fields of research as mathematical physics and the history of religion exhibit a remarkable concurrence.

In the first chapter, which deals with mathematics and physics, I examine the anomalous character of the orthodox evolutionist's contention that in the organic world the simple tends to become complex, while in the inorganic world with which the organic is physically and morphologically continuous the exact opposite is under present conditions the universal rule. In the absence of intelligence everything tends to lose complexity and ultimately crumble away and cease to be. Modern physical experiments demonstrate annihilation, and modern physical theories demand

both annihilation and creation. The raw material of the universe is simply number and mathematical functions which are direct products of thought. Hence philosophical idealism is inevitable. Pythagoras and Plato are vindicated as against Aristotle, and Hegel as against modern materialists. Materialism from Democritus onwards is seen to be only a half-way house. Darwin exalts the purely negative conception of chance into a constitutive principle. Physics has been revolutionised by modern conceptions. Biology stands in need of a similar thorough-going revision of fundamental ideas. The complaint of contemporary biologists that they are no longer in the limelight of popular favour is due to the stagnation of the science and the refusal of its exponents to depart from the now antiquated Darwin-Wallace-Haeckel tradition.

In the chapter on biology I notice the gradual failure of the evolutionary power of adaptation. This power was apparently perfect at one time and in the hands of an immanent intelligence. Vestiges of this creative power still exist in the regeneration of limbs in the simpler organisms. I am compelled to draw the conclusion that while the evolutionary machine was working adequately death did not exist, and that at one time the whole world was a single unity, consentient and organic. In organism intelligence and matter are fused; in mechanism they are separated, the intelligence residing outside the machine. Our bodies are composed of cells which must be regarded as having an individual existence and behaving as

separate psychological entities. The human organism was once immortal, and birth and death came into the world together.

In the chapter on psychology I allude to the very unsatisfactory role assigned to consciousness by evolutionary theory of the past 80 years. I give evidence to show that at one time consciousness was co-extensive with function, that the unconscious was once in the fore-conscious and therefore summonable at will. This is proved by a variety of facts—drug-stimulated experience—super-efficiency of function in trance, dream and supranormal states. These states are now investigated scientifically and form the new science of metapsychology, which embraces cryptaesthesia, telekinesis and 'materialisation.' Not consciousness but the existence and formation of the unconscious is the problem demanding solution. Consciousness is no late emerging entity in the history of evolution, but a fragmentary survival of what was once complete and all-pervading. The goal of psychology is the re-conquest of the unconscious by consciousness. I next show that emotion and desire, the two other members (with intellect) of the psychological trinity, are made up of cognitive elements which have fallen below the threshold of consciousness. The task of psychology would therefore be to transform these once more into the rational elements of which they consist. This would mean that the whole of the body could be explored internally by psychology as it is at present explored externally by physiology. The latter is the more exact science

of the two because physiological data are quantitative, while psychological measurement is notoriously difficult. Further, physiological response is fairly uniform and predictable, while psychological response is unpredictable on account of the complex nature of the mechanism involved. I suggest that this uniformity of response on the part of the physical world is like that of a corpse from which life has receded. Yet some amount of uniformity is necessary in order that we may frame psychological laws. In this sphere of mental determination Freud has been a pioneer. His doctrine of a widely diffused eroticism is the only one which makes comprehensible the hyperaesthesia characteristic of certain bodily areas. What we now suffer from is pathological anaesthesia due to the canalisation of consciousness in certain directions and the obsessions thereby created.

In the chapter on folklore it is shown that there are many clear evidences of degeneration from a perfect state in which our whole world was instinct with life. Man, animals and plants are alike degenerate. The richness of ancient language, reviving memories which occasionally stir within us, attests the reality of this early intellectual and physical splendour. All great writers, of whom I cite Isaiah, Homer and Milton, preserve features of this pristine magnificence. Tradition is quite unanimous on the point, and, as just noted, we are beginning to assess tradition with a truer valuation.

In the chapter on religion I point out that

'revelations' received during moments of supra-normal insight by religious geniuses are the most powerful forces affecting the development of our race. Religious dogmas, however, have been developed to meet historical needs, or to accord with some moral axiom, or provide a basis for some cherished belief, rather than out of sincere regard for abstract truth. Ritual, now merely symbolic, represents an earlier state of reality. And both doctrine and ritual have an enormous psychological appeal which is explicable only by the consideration that they recall a deep-seated memory of an early and beautiful state of humanity.

Coming now to metaphysics I endeavour to show in the section on God that as pure intelligence He *is* but does not *exist* in the technical sense of being located in space-time. Theologians err in identifying Him with any emotion, however powerful and uplifting. "God is love" is merely an epigram. The doctrine of a transcendent creator is possible but improbable, and not very helpful since a further explanation is demanded. The theory has been abandoned by most modern theologies. Defined in the sense of pure intelligence it is impossible or meaningless to deny God. The religious difficulty is not theoretical but practical. It is the easiest thing in the world to define God, the hardest to find Him or, having found, to keep Him. There are actually three worlds. One is that of general or universal mind. The second is that of individual minds. The third is the world of matter. The second is composed of the points of

contact between the first and the third. There is at present a temporary divorce between these two. When they transiently and momentarily come together a scientific discovery or a religious intuition is the fruitful result. The longing for God, misinterpreted by analytical psychology as an infantile regression, is really desire to return to the primeval interaction or fusion of the two.

In the section on freedom I remark that, although the metaphysical problem is difficult, there is a simple and definite meaning attached to the term as commonly used. Freedom is the ability to carry out ideas or concepts. It is the determination by something mental rather than by material circumstances. Political and even economic freedom is more or less a chimera because our most powerful fetter is our ignorance—lack of knowledge bringing lack of power. Yet the amazingly strong sentiment of freedom can be explained only on the hypothesis of a previously existing condition of mankind in which that freedom was realised.

In the section on immortality I review negative and positive theories, observing that the former are unsatisfying to the 'heart' and the latter to the head. I find an abundance of indications that immortality was once a hard fact and that mortality is an acquired and not an inherent characteristic of our race. I conclude that immortality is neither on the one hand impossible nor on the other already secured, but depends upon the acquiring, or more correctly re-acquiring, a large but definite amount of knowledge by a definite time

—in other words upon the result of a Marathon race on the part of humanity with death.

Finally I consider the cause of the Fall and the origin of evil in connection with the theory of ethics and aesthetics. The difficulty is to get behind symptoms to deep-lying causes. Physical passions are caused by cruelty, cruelty by the struggle for existence, the struggle for existence by over-population, over-population by reckless reproduction, reckless reproduction by organic weakness, organic weakness by the general physical deterioration noted in the section on mathematics and physics, physical deterioration by our inability to repair atomic decay, this inability by the loss of a definite body of knowledge (this loss of knowledge arising possibly through the extinction of a superior race). The ultimate cause is thus intellectual and negative—loss of truth. Truth is higher than goodness or beauty. The ultimate test of truth is self-consistence. Ugliness is due to failure to realise original intention and presupposes an early perfect creation. Ethics is not an exact science, because there is no uniformity in the moral code, which is specifically determined by a reaction against particular human weaknesses. Once ' sin ' was physically impossible, now it is unavoidable. Aristotle's famous extremes of vice overlap in practice, leaving no mean wherein virtue may reside. What we now call vice would under happier conditions have been the highest virtue. There is a veritable abyss between the real and the ideal. Morality is necessary under present conditions, but no part of the

original plan. The current economic crisis has roots which go down through the stratum of economics to that of ethics. There is a practical danger in scientific advance just as there is a theoretical danger in an exclusively scientific world-view. Pleasure though absolutely good becomes a relative evil, and pain though absolutely evil becomes a relative good. The standpoint of Christianity towards pain and suffering is justified on strictly scientific principles.

With regard to the chapter expressly devoted to philosophy I must offer a short explanation. In a laudable desire to avoid technicalities I may have annoyed the professional metaphysician. He may feel that his subject has been treated in a somewhat casual or cavalier fashion. Of course in the mathematical section the radical truth has already been reached that the world admits only one explanation, that which is known as objective idealism. No architect, no house; no Great Architect, no universe. Any other explanation is merely ponderous trifling—or at best a half-way house to truth. The metaphysical realist has always seemed to me a man who won't quite take the plunge, who is 90% philosopher and 10% coward—a would-be swimmer who is unable to lift his last toe off the ground. I am not, I hope, undervaluing the very notable 20th century movement towards realism. But its criticisms, acute as they are, seem to touch only so-called subjective idealism, the doctrine that nothing exists apart from the mind of the individual knower. This is equivalent to

saying that without spectators around the aerodrome there is no airplane flight. For the reality of that airplane and its flight it does not matter whether the plane is personally controlled or controlled by wireless or wound up for a flight before it leaves the ground. The essential thing is that there should have been a designer. So for objective idealism it doesn't matter whether the Creator is now working around us or only at a distance or whether he has merely worked in the past and for some reason unknown to us gone off the job. The essential thing is that thought has operated or more accurately is operating in some portion of the space-time continuum. The consciousness which we possess is the nearest thing we know to that absolute thought. I append two weighty sentences extracted from recent leading articles in "Nature." "Before consciousness can be ignored in the indefinite future and past it must be shown that throughout the whole extent and history of the physical universe consciousness had no effect on it." "We cannot deny the right of the psychologist to pursue the study of mind in the hope that an explanation of matter in terms of mind may one day be reached."

In all ages the creative thinker has been an idealist, for he has been in contact with the Great Mind and knows what ultimate reality is. Often rather than abandon this attitude he, like Newton and Faraday, tends towards what we should now call obscurantism in religion. It is no wonder that

the trumpets of Sir Arthur Eddington and Sir James Jeans give no uncertain sound.

And it is significant that perhaps the most penetrating critical mind of our generation, Mr. Bertrand (now Earl) Russell, has passed away from realism into a neutral monism which pictures a universe of which both the individual mind and the external object are geometrical cross-sections or logical divisions. Reality, being thus logical and mathematical, is composed of thought stuff, although Mr. Russell is probably right in saying that this stuff is neither mental nor physical in the ordinary meaning of the words.

The pursuit of truth is like the Victorian party game of searching for an object 'hidden' in a room. First you can't see it at all and cannot believe you ever will see it. Then when you have seen it you think that it is painfully apparent. You wonder why you did not see it long ago and why everyone doesn't see it immediately. This is precisely my feeling regarding the present theory. It does solve the cross-word puzzle of science and humanism. The 'down' and 'across' clues are both legitimately interpreted. The verticals and horizontals definitely knit and interlock. But the solution is so absurdly simple! Why was it not propounded by hundreds of more intelligent persons than myself? There seems to exist, even among men with scientific training, a curious disinclination to leave the beaten track, a strange unwillingness to endure intellectual loneliness sufficiently long to complete the incubation of a

new idea. It is, perhaps, the survival of the herd instinct which fears isolation as dangerous. There are, I know, many men and women who have at the 'back' of their minds ideas similar to those expressed in this book, but have never thought out clearly the implications of these ideas, or have been frozen into mental stagnation by the incisive criticism of some scientific or religious pundit who was reinforcing his own views by jeering at the beliefs of others. There is in all of us a natural tender-mindedness in respect of our inmost convictions. But there is also a much less praiseworthy dread of being dubbed eccentric or unscientific when an inner voice bids us desert the narrow pathway trodden by the millions of modern votaries of 'science' for the broader avenue of truth itself.

CHAPTER II.

Mathematics and Physics.

Evolution connotes two things, first of all continuity, or alteration by infinitesimal gradations. The quantum theory in mechanics and the Mendelian doctrine in biology have destroyed the validity of this concept by showing that the changes which can occur in the physical world, though small, have a definite lower limit. The fine structure of matter is discontinuous. Secondly, it connotes passage from the simple to the more complex. This latter process appears as synthesis in chemistry and anabolism in biology with their opposites analysis and katabolism respectively. The radical assumption of the evolution theory seems to be that matter has in itself the specific property of passing from the simple to the complex. Nothing, I imagine, is further from the truth. The ordinary facts of radio-activity exhibit constantly the phenomenon of the chemical elements with highest atomic numbers reverting to a position lower down in the scale. There is not a solitary instance of the converse process. Some physicists believe that in the interior of stars at vastly higher temperatures than we encounter complex atoms are being born from the womb of

nature; but this is most unlikely, heat being a degraded form of energy and manifestly inadequate as a creative agent. In spite of Professor Millikan's hypothesis of the origin of cosmic radiation the Creator seems to have gone off the job. The alchemist's dream, the transmutation of elements, does indeed occur, but only from higher to lower. Sir James Jeans remarks, "All these facts point to a general degradation of complex atoms in the direction of simplified structure and decreased atomic weight." Inasmuch as the inorganic shades imperceptibly into the organic world, it would be strange if katabolism, so to speak, were the rule in one and anabolism in the other. Katabolism or degeneration we all know in both spheres. Any substance which is exposed to ordinary natural influences deteriorates. Metals, like human beings, age and get 'tired.' The only exceptions to this rule occur in living tissue, which can reproduce itself, and in the results of human intelligence expressed in mechanism or art.

We commonly speak of the evolution of the motor car. Continuous progress from simple to complex has been the rule. But this progress has been effected by the contributed intelligence of thousands of human inventors. Some of the improvements may have been stumbled upon accidentally, so corresponding to 'chance variations.' But to regard the secret of evolution as residing in the material of which engine or body is made is, of course, a palpable absurdity.

Presumably this tendency to degenerate is not

only everywhere in evidence, but is a characteristic property of matter itself. At different stages in the analysis of matter we find pairs of positive and negative units (unlike magnetic poles, positrons and electrons) which have the property of not only temporarily but permanently cancelling each other when they meet, like our friends plus 1 and minus 1 in algebra. Indeed, the process of fading out is not unlike that of a complicated algebraic expression which is simplified by a series of such cancellations until it is finally reduced to zero. We know, of course, that matter itself is not eternal, but is going out of existence every moment, imparting energy to the matter which remains. But ultimately matter and energy must simultaneously disappear. So the part of the universe known to us is ebbing away at a definite though very slow rate. It has even been suggested that this very process of disintegration provides in the radium clock the most reliable method of measuring the lapse of time.

Traditional theology cites fire as the proximate cause of dissolution, probably because fire is at once the most spectacular, the swiftest, and the most efficient agent of destruction. The ashes of a book, a town, a cremated human body, are less complex than the originals. Even if no matter were lost, the results of combustion weighing exactly the same as before, this would be merely the conservation of a single property—that of being drawn to the earth by a constant force. A thousand more interesting properties have been lost. In reality a

small part of the mass has during combustion been converted into light and heat.

These two processes, gain and loss of complexity, are, of course, fundamental. They are, in fact, creation and annihilation. It is clear that one can be effected without intelligence and equally clear that the other cannot. An accident or a philistine blow can destroy a work of art which nothing less than genius can bring into being. Without intelligence there is only one-way traffic from higher to lower.

Actually this organisation or complexity is the sum total of all existence. Aristotle taught that there are two ultimates—matter which is crude and unformed, and form which is given to matter through intelligence. The marble in the statue is the matter, the artist's chiselling is the form. But we now know that the marble itself has form or structure, and that in the last resort the atom has an elaborate structure of its own. Every existing thing consists, like an onion, so to speak, of layer upon layer of form or structure, and when analysis ultimately strips off the last layer nothing is left.

At one stage of the process we are left with matter, space and motion. But obviously a further analysis is inevitable. Descartes took the first step in the reduction of matter to space by identifying the former with simple extension. The final step is just now being taken when dynamics (matter and motion) is assimilated to geometry with one added dimension. The force of gravitation is explained as due to the crumpling of space, and

curved lines in ordinary space become straight world-lines. Descartes also laid the foundation of the method for the further reduction of space to number by showing how our intuition of a straight line can be replaced by an algebraic equation depending on the concept of number alone.

Elementary pure mathematics consists of numbers and operations. These latter are either direct —addition, multiplication (really contracted addition), raising to a positive integral power (really contracted multiplication), or inverse—subtraction, division, and either raising to a fractional power (extracting a root) or obtaining a logarithm to a given base—seven in all. Starting with positive integers (the only kind which the plain honest man recognises as numbers at all) the direct operations do not take us outside this class. We can add, multiply and raise to powers till our brains reel, but our results are still ordinary positive whole numbers. But when we subtract the larger from the smaller we meet negative number. When we divide one integer by another which it does not contain exactly we strike a fraction. And when we take the square root of a number which is not precisely adapted to that process we break into the sphere of the irrational, and if the number is negative (whether a perfect square or not) into the sphere of the 'imaginary,' which, joined to that of the real, is called the complex domain. For the above seven operations this complex domain is closed, and does not lead into any wider hyper-complex field, just as the field of

positive integers is closed for addition, of integers for addition and subtraction, and of rationals for the four simple rules which form the stock in trade of the primary teacher.

Now seven is a sacred number (due to the influence of the moon and Moses). Yet there is no valid reason why other operations than these seven should not be discovered which would lead outside the complex field.

Not only is this extension theoretically possible—it is practically called for most urgently. The mathematician is supplying the physicist with manifestly inadequate tools. The number concept must be widened so as to embrace more than the real and complex numbers. Pure mathematics must produce a third and fourth type of number appropriate to three- and four-dimensional manifolds. The quaternion of Sir William Rowan Hamilton was a magnificent but unsuccessful attempt to fill this gap, whose presence was acutely felt by the greatest of Irish mathematicians. When the missing links have been discovered it will be possible to build up from the unit by direct and inverse processes all the simple, binary, ternary and quaternary numbers which the complete mathematical explanation of the existing universe requires. Meanwhile the tensor calculus is our most powerful weapon.

The progress of science will thus exhibit with increasing clearness a continuous gradation from the highest organism through the biological, chemical and physical spheres down to that of simple arithmetic. The falsity in the earlier

materialism lay, not in carrying the analysis of the world too far, but rather in not carrying it far enough, and in failing to realise that, just as after the biologist come the chemist and physicist, reducing the world of life to soulless matter, so the mathematician comes after them reducing matter to still less soulful number. And owing to recent discoveries the materialist of fifty years ago finds the solid ground cut from beneath his feet. He has been enfiladed, undermined or taken in the rear by the mathematician. And the mathematician has his back against the wall of the nought and the one. No one can dig behind him.

So the raw material out of which the Great Architect has made the universe—nebulae and star clusters, men and women—is not helium or hydrogen, neutrons, electrons or sub-electrons (if there be any such), but mathematical functions operating on and resulting in pure numbers. Non-mathematicians often find considerable difficulty in gaining any clear notion of these functions. The functions themselves are confused with the curious and inappropriate symbolism by which, owing to the unsystematic growth of our existing mathematical notation, they are at present represented to the eye. The mistake is akin to that which would suppose that music consists of small ovals impaled on the lines or nestling in the spaces of the stave instead of trains of sound waves in air possessing definite wave-length, amplitude and duration. The mathematical reality behind music is, of course, the simple numerical ratios which

constitute unison and harmony, two to one, for example, giving the octave and three to two the major fifth. It is my belief that progress in mathematical knowledge will exhibit all these functions in the form of a finite number of explicit operations (necessarily new types of operation, as in the non-commutative algebra of Dirac taking the place of the wave mechanics of de Broglie and Schrödinger) on integer numbers combined with 'segregating' units like our present imaginary unit the square root of minus one. Kronecker said the Almighty made the whole numbers and man made all the rest.

All this will, no doubt, be profoundly unsatisfactory to the mystic. (And all of us are in some respects mystics, having made contact with the infinite at least once in our lives). He has seen the beatific vision and it had nothing to do with novel types of algebra or with the square root of minus unity. For him down the long beam has slid the Holy Grail, and he does not particularly care whether its light-path in the gravitational field was straight, as imagined by Newton, or infinitesimally curved, as demonstrated by Einstein. The divine voice has spoken to him, and it would be trivial and banal, not to say irreverent, to analyse it according to the physical category of wave length. But the above discussion proved, not that the Absolute is pure mathematics, but that when a remorseless analysis has done its work the only residuum is purely mathematical. Not Democritus with his

atoms and void but Pythagoras with his number harmony is the radical philosopher.

Now that the process of analysis has been outlined it remains to see how the reverse process of synthesis is effected. What is the essential characteristic of our first stage, the obtaining of abstract number? In order to produce number it is sufficient to think of it, for the thought or idea of number is identical with the reality. Here, then, creation through an act of intelligence is both possible and necessary. Thought is beginning to form a world out of nothing. In the next stage, that of pure geometry, the idea of a circle, to take one example, differs from the reality, but only to a slight degree. And the further we advance in the direction of the concrete the greater discrepancy we observe between our thought of a thing and the thing itself. We cannot put a hundred crowns in our pocket by merely thinking of them, to borrow Kant's almost too painfully apposite illustration. And we see immediately how transcendently difficult the synthetic process is at higher stages. If we are given a human body we can isolate the carbon, nitrogen, sulphur, of which it is composed. But, being given the carbon, etc., who will reassemble the human body? Anyone can analyse a sonnet of Keats into 39 a's, 4 b's, 2 c's, and so on. It is done when the printer's compositor breaks up the type. But from the alphabetical font of a's, b's and c's to reset the poem we require aid from the fount of poetic inspiration itself. Geological time would shrink into a

transient moment by comparison with the aeons necessary to achieve by any random efforts the arrangement which inspiration has dictated. In point of fact there is always enormously more in the product than in the elements from which it is produced. This is, of course, the fundamental idea of the modern *Gestalt* or configuration psychology. In the second example above the elements are actually inessential. For the poem might be otherwise recorded—on a gramophone disc or in human memory. And this 'enormously more' can be expressed by a single word—brains: the artist's reply, according to the well-worn story, to the question, "With what do you mix your colours?"

At every stage we require intelligence to transform the simple into the complex. No finite intelligence exists at present which has grasped in their entirety the principles underlying the physical world, much less employed them in the work of practical construction. We are therefore compelled to assume that greater though not necessarily infinite intelligences existed in the past, and this is part of the thesis of the present book. The existing universe is a wonderful intellectual structure. But there is no reason to suppose that it is the last word of creative power. It might have been constructed on different and still more wonderful lines, and it is capable of further amplification and elaboration along the existing lines. Matter, for example, is in theory infinitely divisible. But in practice there is almost certainly a limit, though whether we have yet reached it in the electron is

much more problematical. The latest developments of wave theory seem to indicate the contrary. Again we may ask, " Might the universe with all its contents have been deployed in five or six dimensions?" The mathematical consideration of space manifolds answers, " Yes." Was it so created? Unquestionably no. Our having three spatial and one temporal dimension is just an empirical fact to be accepted like having five digits on each hand and foot and not six (like a certain Philistine warrior and hexadactylous cats). There is no absolute reason why it should be so. For some time it has been fashionable, following Minskowsky's lead, to group space and time together in a four-dimensional manifold and speak of all individual occurrences as point-events in this space-time continum. Although this view of the world seems fascinatingly simple and has proved useful in practice to mathematicians it does not do complete justice to the actual nature of things and so cannot in any sense be regarded as an objective world-picture. It obliterates a fundamental distinction between time and space. In the latter direction is conventional, in the former it is real. In space the directions right and left and the preference accorded to the former are purely arbitrary, depending on the fact that most of us are a little less awkward with the right hand than the left. Whereas in time there is an obviously essential distinction between forward and backword. As it is often expressed, time must be written with an arrow head. Or, to put

the difference otherwise, if A and B are space points we can travel either way; if time movements; only one way. The most satisfactory view of the relation of time to space is, perhaps, the following. In the geometry of the plane there is a curious pair of lines which is constantly turning up. According to the ordinary algebraic formula they make the same angle with every line in the plane. They are therefore called isotropic. It is hardly necessary to remark that they are 'imaginary,' and have perhaps already aroused the derision of my more practically minded readers as being a fantastic and unnecessary addition to a sufficiently complicated and unintelligible world of reality. Yet their employment brings order out of chaos in the general theory and makes easy the solution of a great number of real definite problems. It is therefore inconceivable that they should not have some assignable position in the existing world. Now it is clear that the direction in which we are proceeding in time as well as the opposite direction from which we have come has no special relation to any direction in space. I cannot stretch out my hand towards any point and say, "To-morrow lies over there." The forward and backward time directions are therefore isotropic lines in the three-dimensional space of our experience. Further, according to algebra, the distance between any two points on one of these lines works out at zero. And this is, of course, the characteristic property of a time line.

The view of the world as four-dimensional has,

however, stimulated research into the nature of hyper-space, of space of *n* dimensions. In this field of investigation definite and consistent results have been obtained. Each researcher is by no means free to draw a merely private and arbitrary picture of what might be deemed a realm of pure fantasy. Kant's hasty conclusion that the reason is impotent in a sphere where its provisional findings cannot be checked by the evidence of perception in a possible experience is seen to be a foolish one. The far more adequate Hegelian criterion of mutual consistency and internal coherence can still be applied and provides a perfectly stringent test. Truth can still flourish and error become self-revealed, contradict itself, and perish even when contact with existent material reality is necessarily lost. Mathematical science may here be forging weapons which find their application only in a non-existent universe, just as it has already been shown to fail in providing adequate apparatus for unravelling the secrets of the existing one. Yet even here applications may be made to problems dealing with systems like those of two or more electrons which depend on a large number of independent co-ordinates. For this reason it is becoming more than ever impossible to drink the traditional Cambridge toast, "Here's to pure mathematics, and may it never be of any use to anyone." For the most refined mathematical analysis is rapidly becoming not merely a luxury but a necessity to the physicist who is tackling fundamental problems.

Most people are so accustomed to think of the

analytical side of mathematics that they never imagine that it has a synthetic and quasi-artistic side as well. They remember that the arithmetical problems of their school days or of later years (like monthly office or household expenses) have a single and definite though sometimes startling and unpleasant answer. This result is either right or wrong. There is no room for ambiguity, difference of opinion, or the freedom of choice which makes art. No doubt, to take a very simple example, if you ask me, "How much are 8 times 3?" I must say 24—that is if my answer must be given in the form of a whole number. But if you ask me, "How much is 24?" I may reply, not only 8 times 3 but 6 times 4 or 12 times 2, or again 16 times $1\frac{1}{2}$, or 48 times $\frac{1}{2}$. Or, further, I may say infinitely many things, as 21 plus 3, or 1957 minus 1933, or the square root of 576, or the cube root of 13824, or the logarithm to the base 2 of 16777216, or $1\times2\times3\times4$ (that is ' factorial ' 4), or finally, since $\cos 0=1$, factorial ($\cos 0+\cos 0+\cos 0+\cos 0$). The last expression doesn't look a bit like 24. We have here almost literally the making of something out of nothing, as well as an indication of the rôle which even elementary trigonometry might play, not merely in interpreting but in creating a world. And further still, starting with zero, I can obviously build up a system limitless in its complexity which will, of course, vanish when the converse operations are performed. Here is infinite freedom, boundless scope for artistry without the use of any raw material whatever. This gives a very rough idea

of what mathematicians mean by creation, of what the philosopher-mathematician Plato meant when he spoke of the universe as made out of the nought and the one. For, speaking theologically, we may say that the universe is God's answer to the question, "What is nothing?" Plato, as against Aristotle, maintained that there was just one ultimate, form or idea. And we are now in a position to decide the question definitely in Plato's favour. Henceforward he, and not Aristotle, is the master of those who know. For Aristotle, more learned and in some ways more logical, just failed to obtain Plato's supreme vision of truth. So, lacking the most penetrating insight into reality, he fell into the philosophical sin of dualism. And medieval thinkers sinned with him and fell with him. Modern philosophy, starting with Descartes, set an impassable gulf between mind and matter. Spinoza and Leibniz very nearly resolved the duality, but just stopped short of the goal. Some modern scientists, indeed, are thinking just at present on almost precisely Leibnizian lines. Kant solved the problem by inventing another kind of dualism. It was left to Hegel, the culminating idealist, to rise once more into the clear light of monism. Since then thinkers have done little but serve up again fragments from the banquet prepared by the great metaphysician. Hegel, no doubt, like Plato, made all kinds of mistakes on relatively inessential matters. But on the essentials they are fundamentally and for ever right. Their main contention that thought is constitutive and not merely descrip-

tive of reality is the central position in philosophy. It has, I trust, been amply vindicated, so far as mathematics is concerned, in this chapter. In fact the interpretation of the results of modern physics in relation to philosophy has made this conclusion not only possible but inevitable. There is, of course, another doctrine associated with the name of Bergson, and sometimes regarded as the formal metaphysical statement of biological evolution. This doctrine makes 'real' time the source of all things. And in fact a good deal of modern loose and inferior thinking does practically deify time. It has been said that the second-rate man will deify anything except God. But the masters from Plato to Hegel with one voice deify thought alone. To do otherwise is to be guilty of metaphysical idolatry, of rank philosophical heresy. Thought shows itself in progress of all kinds, in more elaborate structure and organisation, in constructive activity generally. While the mere lapse of time sees indifferently progress and decay. And without intelligence decay must be the rule. The universe divorced from intelligence must crumble and return into nothingness.

The Greeks held that the world came into and continues in being partly by the agency of fate and partly by that of chance. The numerical example given earlier in this chapter vindicates the distinction in a simple case. 'Fate' corresponds to the necessary laws of numerical combination, 'chance' to the possibility of a quite literally infinite number of different patterns which are equally compatible

with these laws. But the actual existence of one of these patterns is the result, not of blind chance, but of intelligent selection—in other words, of art. It is an open secret that Darwinism is no longer the magic word it once was. Modern biologists regard the operation of natural and sexual selection upon chance variations as explaining only a small part of the 'orthogenetic' tendency. Further, the inadequacy of the theory as a complete explanation has again and again been pointed out. The chance variations are not themselves explained. And perhaps only the mathematician realises how deep this inadequacy is. For to him the word 'chance' as defined above expresses an abstract possibility. It does not supply the machinery necessary to turn that possibility into a concrete reality. It has a merely permissive connotation. Beyond that it is a purely negative concept, an explicit confession of our ignorance. Chance is in itself no efficient cause, possesses no determining power. We do not assert, for instance, that the tossed coin or spun roulette ball in their motion follow any other laws than those of ordinary dynamics which govern the behaviour of, say, billiard balls, but merely that the operator or spectator is not acute enough to foresee the result of the operation of these laws. An infinitely skilful croupier could put the ball into zero as certainly as a moderate billiards player can pocket the red from an easy position. The very word 'chance' carries the mischievous suggestion that these variations were, like the falling of a penny, a choice between two very simple possi-

bilities. Whereas they are in reality concrete artistic efforts of a highly elaborate type comparable with the unfolding of the universe itself. It is significant to note that the adjective 'indefinite' is now usually applied to these variations, a word which does not bear this objectionable connotation.

Perhaps the modern position may be briefly summed up as follows. There is a general upward orthogenetic trend, and there are individual variations. Darwin thought that the latter were indefinite and that the environment working on these indefinite variations could produce the general trend. That is not accepted now. Both the trend and the variations have to be explained, and the latter are more likely to be explained by the former than *vice versa*. Probably the individual variations are not indefinite at all, but are part of the general trend.

Attacking Darwinism in the narrower sense is, therefore, unnecessary. But as the genetic method of approach has proved of immense value in many different fields of investigation, the Darwinian theory in the wider sense has been expanded and exalted into a general world-view, and has been during the past 80 years the most potent disintegrating force, operating on orthodox theology and on broader philosophical theism. And Christian apologists, with, as I have said, the significant exception of the Roman Catholic Church and Protestant evangelicals or 'fundamentalists,' after first sneering at or savagely attacking Darwin

and all his works, have since gone to the other extreme and swallowed 'evolution' wholesale. They have, in fact, preferred to surrender the central citadel of dogma and whittle down Church doctrine by dropping practically all the characteristic elements of Christian belief rather than lay themselves open to the charge of obscurantism. This radical change of face and broad-mindedness at any cost has apparently deprived Protestantism of its sword and its gospel, its militant aggressiveness, its power to work a sudden change in the lives of men and women (as typified in the achievements of the Salvation Army in the last generation), as well as incurred very incisive criticism from polemical Catholic writers. These latter have made a reasonable, consistent and dignified protest against dragging religion at the heels of science. One able apologist for the older faith has declared that it is just as absurd to make the soul's progress here and happiness hereafter depend on varying biological hypotheses as on the fluctuating fortunes of the undulatory and corpuscular theories of light.

Of course Charles Darwin was acute enough to pierce the armour of the narrow fundamentalism of his day. His contention that his own theory of evolution was no more opposed to religion than was Newton's theory of gravitation is well known. This was a sound argument in 1860. But now that the Newtonian theory has been so modified as to destroy for ever its mechanical nature, it is but reasonable to suppose that a similar correction

must be applied to the Darwinian hypothesis of mechanical evolution through the agency of natural selection. The Divine artist has come to light in the one, and why not in the other? For during the past thirty years physics has made spectacular progress by making a clean sweep of outworn convictions, however strongly held, and interpreting experimental results in the light of new ideas (some mathematical, some almost metaphysical) which would to the older physicist have seemed sheer lunacy, and which even the modern chemist still regards with some amount of suspicion. Botanists and zoologists, on the other hand, though making innumerable advances in detail, have perhaps been too much dazzled by the genius of Darwin to revise the landmarks fixed by the "Origin of Species."

It is a general law that science progresses by oscillation to and fro about the truth like the pointer of a chemical balance about the true reading. But biology, after making one tremendous swing, has remained fixed in the once new but now antiquated position ever since. This immobility is reflected in the attitude towards the biological sciences by the man in the street, who is generally a shrewd judge as to who is the live wire even in subjects of which he has no expert knowledge. So he turns away from the present stagnancy of the life sciences which made such a wide appeal 50 years ago and reads the admirable popularisations of the new physics, which extend his horizon and re-orient his mind. During the

past 70 years fundamental novelty in biological ideas appears, curiously enough, chiefly in writers on the theory of education.

Apparently the time has come to break with the Darwin-Wallace-Haeckel tradition and restate the position in terms of a new fundamentalism. Very humbly would I venture to suggest that the root idea requires modification in three respects. First, the evolutionary process carried organic life to a point from which subsequent degeneration has taken place. Second, this process was in no sense blind or casual, but was directed at every step by intelligence operating from within the organism. Third, the process has long ago ceased, and a complete relapse into primeval nothingness can only be arrested by such advance in knowledge as would secure the reconquest of the world by intelligence.

That there was a long continuous upward movement I do not for a moment deny. It is proved by multitudes of unchallengeable facts of comparative anatomy and embryology. But at different times and at different points this progress halted, stabilising the different extant types of life. Man went furthest. But he, too, stopped at a definite point. Then followed not only arrest of progress but degeneration. The old controversy was between evolution and a fall. I cannot explain the world except on the hypothesis of evolution plus a fall.

About all human life and endeavour there is a curious and painful sense of futility. The same is true with regard to animals. There is nothing more

futile than a caged tiger. Even a tiger at liberty in its natural state does nothing but get its own food—at some other creature's expense. Were there a latent evolutionary power in matter the reverse would be true. The same happens in the inorganic world. All organisation tends to crumble away. But is there an infinite number of possible reproductions? Some species have perished through lack of food or want of adaptive power, or perhaps for a more fundamental reason, because the die would no longer mint a new coin. Some animals fail to breed in captivity, and sooner or later may fail to breed at all. The older writers saw the doctrine of the Fall written across the face of all creation. Were they totally in error? There is something fundamentally wrong with life, with ourselves, at present. Not wrong with any particular thing, but wrong with everything. There is in the world an incalculable amount of perfectly unreasonable and yet of perfectly real pessimism. Everyone is worried about something—generally of a quite trivial nature. Yet the worry itself is by no means trivial. The whole creation groaneth and travaileth. One disease is more or less stamped out, but another takes its place. Medical science can diagnose but not cure, surgery can operate with only a technical success because it cannot supply the patient with strength to withstand the shock of the operation. Even if the door were effectively closed against all manner of bacterial infections—by sanitary measures or by acquired immunity—death would occur through defective metabolism

and consequent inability to perform the functions necessary to life. The engine would cease to turn over. There is a general deterioration in structure. No doubt in the organism very remarkable means are adopted to remedy the decay. As the shipwright replaces rotten by sound timber, ageing by young metal, so fresh material is supplied to the cell. We are obviously living on organic capital all the time, just as during the world war we were living on economic capital. That capital is energy, of which there is a limited amount. Matter is passing away into radiation. Entropy is increasing, leading to a general levelling out and annihilation of all things. This doctrine of universal disintegration is just the one which has come out of the melting pot of modern physics as it went in. It is as true for the new physics as it was for the old. The late Lord Rayleigh was asked what was the saddest fact he had ever heard. He replied, "The fact that the entropy of this universe tends to a maximum." Jeans is not absolutely certain that the universe will descend to a uniform level, but he asserts that the odds in favour of its doing so are 10^{79}: 1. This seems good enough.

With regard to the necessity for intelligence in the evolutionary process, perhaps enough has been said. Even granted infinite time blind, casual or random effort would never reach that particular atomic configuration we call the universe. The number of atoms lying in three-dimensional space bears to the number of moments in one-dimensional time the overwhelming ratio borne by the cube of

a large number to the number itself. Even with a linear sequence like the words of a book six monkeys (to take Huxley's example) starting at the dawn of geological time to thump six typewriting machines would not yet have produced a hundred consecutive letters divisible into words bearing a meaning in any known language. Still less would random activity result in the man of letters, who is presumably greater than his handiwork as the potter is worthier than the pot. Could anyone seriously believe that such haphazard procedure brought into existence the world we know? As well might he expect the shifting of the grains on the seashore to present him with a watch, complete in every detail—to reproduce a venerable illustration. For indeed William Paley, senior wrangler and divine, has here furnished an argument which has lost none of its adequacy. While Darwin's theory was not only insufficient, but ludicrously insufficient. Though accompanied by a wealth of accurate and lucidly arranged detail which cannot be too much admired, the whole spirit of his explanation is wrong. It is like attributing the improvement in the control of automobiles to the elimination of those drivers who have pressed the accelerator pedal in mistake for the foot-brake. Not merely did the world not happen thus, it couldn't have happened thus. Never was there an observer who saw the trees more clearly than Charles Darwin. Never did anyone more completely miss seeing the wood. Perhaps it was because he lacked the advantage of a rigorous

mathematical training, and so passed as sound an argument which did not deceive the older and more relentless thinker. Or perhaps it is impossible to house the conscientious and brilliant interrogator of nature and the framer of ultimate hypotheses within the same tenement of clay.

It is clear that this necessary intelligence must have acted internally as flashes or brain waves now come to us. Any attempt to represent an externally acting intelligence results in a God made in the image of man, and involves us in all the anthropomorphic crudities which have made a great deal of orthodox religion unacceptable to the average thinking man and woman to-day. That will, however, be considered in detail in later chapters. Meanwhile my contention is briefly this. Evolution proceeded up to a point of perfection. Imperfections have crept in since that point. This evolution was 100 per cent. intelligent. The ancestors of the present living creatures were the architects of their own bodily structures aided by the divine intelligence then immanent in everything.

Finally we must ask the question "Is the evolutionary process operating now?" I must answer emphatically in the negative. The evidence brought forward to prove the affirmative is singularly slight and unconvincing. The present advances which Darwin himself considers in his great work are really very trivial. The only considerable results have been achieved by intelligence, the intelligence of scientific breeders of animals making use of variations latent in the germ plasm. There are

indeed minor novelties—a new way of arranging flowers on the dinner table, rather than the creation of the flowers themselves. No real novelty is emerging. The only evolution we now observe is, as several shrewd writers have put it, obviously due to a previous involution. The process has ceased in every part of the universe known to us, except possibly in certain portions of the human brain. And this is not evolution in the sense in which that word is commonly understood, because it is accompanied by intelligence. Does anyone believe that the present evolutionary forces are, apart from intelligence, capable of raising life above its present level he is more deluded than those religious enthusiasts who in flimsy night attire climbed a mountain to greet the millennial dawn. The continual diminution of energy, the corresponding increase of entropy or deadness, has for a long time made progress impossible. Evolution has been forced to call a halt for very lack of sound material. The Divine geometer is in the position of a human architect who has a perfect design for a cathedral but only crumbling sandstone with which to build, or like an artificer who is using some aluminium alloy such as magnalium and finds it growing spongy and disintegrating into powder. Our glorious world is rotting from its foundations and can hold together only for a limited time. Meanwhile engineers—physical, biological, mental—are trying to discover and repair local and general faults. And optimists, of whom I am one, assert that more than the former glory will be restored.

CHAPTER III.

Biology.

On the present theory the evolutionary process was originally directed by intelligence and subsequently arrested at some point through the decay of that intelligence. The force which produced nature is clearly not operating now. The only novelties now occurring are the result of human intelligence controlling breeding and modifying environment. It is a commonplace that during the Pleistocene period the chief development which took place in the primates was an enlargement and complication of the brain and a very considerable reduction in the size of the teeth and jaw. This means in effect that other parts had ceased to develop. The whole process was obviously slowing down and becoming less effective. For some reason life was losing the power to adapt itself to its environment or its environment to itself. There are many instances of this progressive failure in adjustment. The ratio of size of tooth to width of jaw is not always correct, as any dental surgeon can testify. And, to go a little further back, it is notorious that the change from four feet to two, from quadrupedal to orthograde or upright posture and plantigrade progression (walking on the sole

of the foot instead of the toe) in the great anthropoids was very inefficiently carried out. We are not quite happy in walking on our hind legs. The muscles of leg and abdomen as well as the vascular system were not modified to deal with the shifting of weight—hence the frequency of conditions like hernia, difficulties associated with pregnancy, varicose veins. Our body, magnificent structure though it is, shows in its later alterations the hand, so to speak, of an inferior craftsman. Or, perhaps, as suggested in the last chapter, the material had undergone a subtle deterioration. The primeval plasticity of matter had suffered a senile stiffening which prevented it from conforming adequately to the new requirements, from being as heretofore clay in the hands of the potter. How plastic was that material at one stage of evolution is shown by the example of ants, whose structure was designed to correspond with their function in the community. The bodily centres which control growth have been—until the birth of the science of endocrinology—beyond our conscious control. We have been in the position of common seamen placed in charge of a modern battle cruiser, who can use some of the gadgets, who can perhaps fuel and start the engines and steer a course, but cannot repair or replace any part of the mechanism.

But because we cannot now by thinking add a cubit to our stature we must not conclude that it was ever thus. Metaphysical orthodoxy regards the totality of things that are as the result of intelligence operating in the past. It is now theo-

logical orthodoxy to view this intelligence as immanent rather than transcendent—in other words, as working from inside rather than outside. The ultimate world view must contain and reconcile the orthodoxy of each separate science, using science in its widest meaning. Men of a materialistic habit of thought have in all ages, but more definitely during the past 1,000 years, protested first against creation, second against creation from outside. It is first of all the thought of the pot being made out of nothing, and next the notion of the potter as distinct from the pot which has quite reasonably stuck in their gizzards. Here, however, a compromise is already clearly indicated. The theologian has on the one hand given up holding the theory of a transcendent creator in any crude form. The doctrine as maintained in the past had moral and disciplinary rather than scientific value. And on the other hand the new physics removes the prime theoretical difficulty in the way of creation out of nothing. It would be more accurate to say that it makes creation necessary. Matter which is each instant going out of existence has presumably come into existence at some previous instant. There has been a flow from the world of thought into the world of ordinary reality, producing (according to the theory sketched in the last chapter) numbers, mathematical functions, protons, atoms, molecules, right up to men and women. At one time that flow reached every material particle. Now it seems to irrigate, if I may be allowed the metaphor, only

certain tracts of the human brain, and even these with distressing infrequence. Actually in the creative epoch of evolution the power to construct the most elaborate structure literally out of nothing was everywhere present. As I believe, intelligence working from within designed step by step even the human body. That eccentric but profound thinker, Samuel Butler, says that the father of all crabs 'invented' his claws. And, as has been shrewdly said, a spider making a web is is not really so far removed from the spider making a spider. Of course, a spider does make a spider. The supreme artistic effort, that of reproduction, is on Butler's theory a prodigious feat of memory. An imperfect or deformed infant is due to memory failure like a pianoforte composition imperfectly recollected and incorrectly rendered. The difference between this reproductive activity and the original elaboration of *homo sapiens* is the same as the difference between the gradual building up from original designs of a modern automobile and its mass production by Sir William Morris's workmen. This marvellous creative power which now resides in single organisms and in the germ cells of more highly differentiated plants or animals was once possessed by all living matter. The ability to replace, say, a leg or arm has not been so very long lost by the human organism, while complete regenerative power is still retained by simpler forms of life.

After the peak of evolution was passed life as a whole lost its synthetic power. To make bricks

it henceforward required straw. Now to construct an atom of carbon may or may not be an easier task than to build up carbon into complex organic compounds. But the fact remains that at present we can do one but not the other. And in our case it is the first step which costs most. We are like the painter, who can mix but not make his pigments, or the housekeeper, who can make gooseberry jam but not the gooseberries.

It seems, therefore, that in the earlier stages of evolution intelligence built up the existing world. Its products were, however, organisms not machines. In fact, by the word ' machine ' we mean the result of intelligence working outside the material. A wheelbarrow and an internal combustion engine are both ingenious applications of mechanical ideas. The ideas, the ingenuity, are fused with the material. But the intelligence which has moulded the material to certain purposes itself remains apart. While in organism intelligence remains in contact with the material result of its intellectual activity. Of course, our Golden Age had its strictly mechanical triumphs, its levers in the human limbs, its hydraulic pumps in the osmotic pressure producing sap-rise in trees, its application of theoretical dynamics in the cat turning itself in free air. For the mathematics, the physics, the chemistry, of the organism are ordinary mathematics, physics and chemistry, but applied with a subtlety which we can admire and understand but not yet imitate.

But, to retrace our steps for a moment, it will

be asserted, "Surely the fact that evolution was steadily upward is definitely proved by fossil evidence. Here, if anywhere, is a theory most adequately documented." The geologist may, perhaps, be forgiven for his irreverence in writing god with a small g and the Record of the Rocks with two large R's, or replacing the volume of the sacred law by the characters written on sedimentary deposits. But, just as has so often happened in the case of sacred writings, a perfectly authentic document has been completely interpreted in accordance with a preconceived idea. About the palaeontological record there is one striking feature —the rare and sporadic occurrence of fossil remains. To take the most obvious example, we have only six sub-human types, found in Piltdown, Java, Peking, Heidelberg, Neanderthal and Rhodesia, and dated with fair accuracy by the modern 'ganometric' method (measuring the length of enamel on the teeth of associated elephants) and assigned to periods separated by intervals of the order of 100,000 years spread over part of Pliocene and the whole of Pleistocene time. Of course, this fact has been the subject of frequent comment, and has hitherto been accounted for by the consideration that the preservation of a fossil is an infrequent accident depending on the concurrence of a number of favourable circumstances. But I would suggest that there is a still simpler explanation—that in those days of pristine evolutionary vigour man-like beings were few in number and that they did not die. The ascent of

man took hundreds of thousands of years, but only a single generation. The torch race of evolution was not a relay race—the same runner carried the torch from start to finish.

The recapitulation of our race's progress which takes place in every human embryo is carried out in a single organism, which goes through the successive stages of reptile, bird, mammal, as I believe its ancestor or prototype did in prehistoric times. The separation between somatic and germinal cells which is essential to the present method of continuing life by reproduction and the relative conservatism or stability of the latter would have been an intolerable brake on the wheels of evolution. Indeed, as I maintain, evolution ended when reproduction began.

It is frankly inconceivable that beings endowed with an almost infinite power of development should at the same time be subject to the strange cessation of function we call death. Had the process been continuously accompanied by this death of individual organisms we should expect to meet with fossil types representing the links intermediate between existing species. These missing links cannot be satisfactorily explained on the generally accepted theory.

The progress of evolution was at first like the orderly, regular and tidy advance of an intact column on the march. It left no traces. Later, like a routed and disorganised rabble without commissariat, it leaves a trail of refuse and devastation.

It pillages as it goes and the stragglers fall out and line the roadside.

The earliest geological epoch has been labelled Azoic because there was little or no evidence of life. More logically should it have been denominated Athanatic or Athanasian, because there is no evidence of death. I might call mine the Athanasian creed, and, though I dare say I stand at present alone, I have no doubt that this will one day be the scientific, as it has been the religious, creed of humanity. For all great religions concur in teaching that at some definite epoch death entered the world. Such is very definitely the doctrine contained in the Hebrew and Christian writings.

The chief difficulty of this theory is that we must regard the universe and in particular this earth of ours as being originally a single gigantic organism once 100% alive and now at least 99% dead. This seems at first sight a staggering conception. Yet when we remember that a coral atoll —about the deadest thing in all the world—was once the scene of furious activity on the part of Coelenterates, and is made of the limy skeletons of these hollow-bellied polyps, we may well consider it probable that every single atom was at some time caught up into the vigorous whirl of organic activity and was originally brought into being by organic effort. I need not at this stage point out—it will be done in the folklore section—how exactly this notion tallies with ancient conceptions, primitive or sophisticated, from Vergil's "*Spiritus intus*

alit," to the remark of an Eskimo philosopher, "The earth is a great beast and she is dead."

The difference between organic and inorganic is thus reduced to that between present and past activity. Instead of life being an intruder on a dead planet, the planet is the result of the stilling of vital activity. The pendulum stops vibrating but it does not cease to exist. Instead of life and consciousness being entities emerging at arbitrary points in evolution, they are essentially characteristic of the entire process.

Organism is, of course, marked by a certain unity—a close co-operation between its several parts for a great variety of ends. We are all familiar with the ancient and at the same time very modern comparison between the individual and the state. The individual, like the state, is regarded as made up of different members who cannot always sink their private interests in the common weal, and who are not uncommonly at war with one another. If we identify these smaller units with the cells forming the body the comparison is really not a metaphor at all, but a statement of literal truth, and probably the only satisfactory way of looking at what actually occurs. The fixed cells are the native citizens. The bacteria are the floating alien population, some desirable, others at first sight very definitely undesirable. Each cell is an individual, and its behaviour must be described in psychological terms. For example, in cancerous growths certain cells act as if they did not belong to the body politic at all. At the expense of other

cells which are more important—even vital—to the continued communal existence, they grow and proliferate, not foreseeing that they themselves cannot long survive the general death of the organism. This unreasonable behaviour may be due to a regression on the part of the cell to more primitive activity appropriate to the time when it was capable of maintaining a separate existence as a unicellular organism. The description of cancer as cell bolshevism, startling as it seemed at first, is now scientific orthodoxy. The very word ' malignant ' has a psychological flavour. Of course there are also benignant tumours where the cells grow immoderately but do not actually murder their neighbours in order to obtain the sustenance necessary. Again it may be, though this is at present a quite unorthodox view, that in conditions such as pulmonary phthisis living cells are actually called upon to sacrifice themselves for the general good, the breaking down of living tissue providing in the last resort the necessary means of carrying on the general vital activity and thus tiding over a crisis during which the necessary energy, owing to defective metabolism, cannot be obtained from food consumed. In such cases it is obviously futile to shut the door against disease. For disease is merely a symptom of a more deeply lying condition of general inadequacy. Pain we may regard as the message to consciousness that a fight is in progress, the individual cells being the combatants. There is always a lack of general bodily energy, energy sufficient to keep all the

organs working full time, the result being functional disorder. In health the deficiency shifts rapidly from place to place, so that the mischief never becomes localised in any given organ long enough to produce organic disease. Yet it is not too much to say that no single organ functions really adequately for any length of time. The moments during which the brain, for example, is working truly, when 'brain waves' come, are as rare as they are precious. In normal conditions there is intellectual vacuity and the mental state of volition is weak and vacillating, the 'will' being swayed by the varying fortune of the struggle between different cell groups. We should like to go out, for example. Our lungs and skin crave fresh air. Yet at the same time we desire repose. Our muscles have not made good the tissue waste consequent upon our last bout of exercise. The result is mental indecision as these rival interests strive for supremacy. We are driven hither and thither precisely like a state torn by intestine faction because we are not one but many. St. Paul's famous account of the struggle between the 'flesh' and the 'spirit' is just one example of this.

It is not easy, of course, to distinguish between the flesh and the spirit, or to decide which functions are higher and which lower. On the orthodox evolutionary theory those which have been added later should be in some sense higher. It seems, however, probable that the obviously lower functions are, on the contrary, later additions to the original structure. We are thus justified in drawing

the inference that at some stage the peak of evolution had been passed. Let us take as typical 'higher' functions speech (including singing) and hearing, typical 'lower' functions nutrition and waste elimination. I believe that the original purpose of the tube, now named after its digestive function, alimentary, was to produce sound. Its present double rôle is distinctly felt as a strain by after-dinner vocalists. The string and wind instruments which constitute our modern orchestras are inanimate counterparts of and imperfect substitutes for the vocal chords and organ pipe and voice which our unfallen race possessed in the central thoroughfare of their own bodies. At an early stage in man's degeneration he was forced to utilise the organic material built up by vegetable organisms. Later on decreasing efficiency compelled or made desirable the use of animal food—a change to which his teeth are not yet accommodated. Ancient legends record this in the well-known story of Noah. Thus only can we explain the cult of vegetarianism as a religion. It is a return to a more beautiful social order in which life did not prey upon other animal life. A similar explanation may be given of the practice of complete fasting associated with most of the great religions. It is a regression to a time when life in complete perfection was maintained on a still more ascetic diet or without diet at all. It seems tolerably certain that the present mammalian stomach is not an original organ, but simply a pouch on a primitive cylindrical or tubular canal.

In the second stage of degeneration excretion became necessary. The machine lost efficiency and could not completely absorb the food ingested. So the large intestine terminating in the rectum was cut as a necessary outlet. Comparative anatomy attests its late origin. The new passage left the vermiform appendix a blind alley, and hence many tears. There are numerous indications that at one time animal excreta were used as food. The behaviour of children and pedigree dogs in the presence of excrement, the likeness of certain highly-prized articles of food and drink to faeces and urine, as well as many other phenomena described in psychoanalytic text-books cannot be satisfactorily explained otherwise. Even certain schoolboy obscenities of expression manifest their nutritive origin by using the verb signifying the act by which the infant obtains nourishment. Lest the truth of all this should be doubted let me cite a typical instance. The suckling of the human infant is an example of a natural function which is just beginning to excite disgust in fastidious minds. If the present attitude continues it will be completely abandoned in favour of artificial feeding, and the very idea will arouse in the minds of future generations such loathing that they will deny that such a practice could ever have occurred.

Still I think I hear some of you say, "How perfectly disgusting." To my mind nothing is really disgusting except unkindness. And judged by either criterion nothing is so disgusting as the

eating of the familiar breakfast egg—the ovum of the domestic fowl. Still more horrible is the snatching of the chicken itself for table purposes. And one might reasonably develop a tender conscience even towards the vegetable, were we in Gilbert's words to cultivate

> "An affection à la Plato for a bashful young potato,
> Or a not too French French bean."

We must, however, cultivate a certain callousness in this latter respect at least. For life in our degenerate state can no longer be supported on an inorganic diet.

As this degeneration proceeded the organism as a whole began to wear out and frequent reproduction became necessary. Certain cells collected all the essential elements of the original organism and, after draining enough of the vitality of the parent, seceded, forming a new cell community. This reproduction was, of course, asexual. Then certain individuals were set aside for this reproductive work—in bees a comparatively small number, in human beings as nearly as possible 50% of the population. The stage at which this bifurcation occurred can (on the theory of the parallelism of the development of the race and the individual) be readily ascertained from a study of the embryo. The facts of latent bi-sexuality, ambivalence, and sex reversal are proofs of the comparatively recent differentiation of the sexes. Vestigial organs like the male breast and uterus and the occurrences of

phrases like 'nursing fathers' in the Old Testament attest the fact that masculine and feminine tasks were until lately undertaken by the same individual. The biological fact of parthenogenesis (allied no doubt to hermaphroditism) explains the probably authentic stories of virgin birth in early myth and the assertion of such an occurrence in the case of the founder of Christianity.

Psychologically we have the curious feeling that reproduction is at once noble and degrading. Biologically the desire to reproduce is the first sign of senility. The ship is sinking and the lifeboat must be prepared. One torch is burning out and another must be lighted.

We can no longer assert the equivalence of reproduction and sex. The latter is by far the wider psychological category, embracing desires and functions which have no bearing whatever upon the former. The function of sex is, perhaps, not yet completely known. It is certainly not reproduction. Reproduction in women lasts normally from puberty to the menopause. Sexual life in men and women ends only with the grave, and begins not with the cradle but with pre-natal differentiation. What really happens during adolescence is that the discharge of the secretion of one of the endocrine organs tends to become catastrophic rather than continuous and external rather than internal.

It is an axiom that Nature does nothing without a purpose. If the sole object of sex were reproduction it is obvious that all but an infinitesimal fraction

of the multitudes of spermatozoa produced by the male organism would have lived in vain. What then is the true function of these highly organised cells, the very choicest products of Nature's workshop inasmuch as they carry, each one of them, the brain and body of an incalculable number of descendants? According to a theory put forward by a leading modern woman sexologist, the seminal fluid is readily absorbed through the vaginal lining and passes into the blood-stream of the female with very beneficial results. Though this fact is not accepted by modern gynaecologists, it was so without doubt in an earlier and better era. The very names 'intercourse' and 'commerce' applied to the intersexual act imply the mutual exchange of something valuable to each participant. Possibly long before the stage of mass production the sexes came together in an embrace which was infertile as regards a new organism but mutually fertilising in a high degree to the two existing ones. Under present conditions, however, it seems obvious that such fluids should be discharged internally unless in the comparatively rare number of cases when conception is desired. Steinach's well-known operation, which consists in tying one or both of the spermatic ducts, demonstrates the value of this in promoting health and even in restoring youth to the male. Pleasure, potency and complete satisfaction in coitus are, of course, retained along with added virility and diminished exhaustion as the valuable chemical substances in the ejaculate are now preserved to the organism. In the absence of

this operation few persons possess either sufficient self-control or sufficient technical skill to achieve the desired result. It is, of course, possible to obtain apparatus designed to help, not only couples, but individuals of either sex who suffer through excessive solitary indulgence.

There seems little doubt that one of the original functions of the vaginal sphincter of the female was to control or prevent ejaculation by the male. At present it is powerless to do so. We have here just another example of deterioration leading to practically complete cessation of function. Like most human activities, the sex act is but a shadow of its pristine self.

CHAPTER IV.

PSYCHOLOGY.

(1)

But if, according to the present theory, everything is permeated with intelligence, what is the difference between organic and inorganic? Simply a difference of degree. But where does consciousness come in? The rôle assigned to consciousness by the orthodox evolution theory is extraordinarily anomalous and most unsatisfactory. At some stage in the increasing complexity it is postulated that consciousness has emerged. This emergent entity is a by-product, a luxury. It has as little to do with the evolutionary process as the shadow cast behind has in driving the train, according to T. H. Huxley's famous simile. Now, what is consciousness? It may be described—though not, of course, defined—as the aggregate of brain cells which are at any given moment in touch with one another. Some of them give us information about objects, sounds, odours external to the body, others about internal states, while still others represent past experience in the form of memory images. Derivatively or etymologically, consciousness is a 'knowing together' on the part of a small community of 'knowers.' In the case of split or multiple personality the different groups of cells

which constitute personalities A and B have few, if any, elements common to both groups, while in the normal mind almost every conscious state contains a large number of the same elements. And these elements are continually passing in and out over the threshold. From the egoistic and purely personal point of view we must exalt consciousness because without it we were not. But from a biological standpoint we are at first sight justified in joining with the evolutionist in placing a low valuation upon it. Compare it with the unconscious mind! Our heat regulating activities in changing our clothing and in obtaining warmth and shelter are simple compared with the skin activity which maintains a uniform bodily temperature by promoting or checking perspiration, our conscious actions in masticating and swallowing trivial in comparison with the unconsciously directed process of digestion in the alimentary canal. Often in cases of severe illness Nature sends consciousness away on a long holiday until the most delicate and difficult part of the job is finished. Our conscious mind, even when engaged on relatively complicated problems, never rises to the level of its unconscious neighbour. Generally it is occupied with comparatively simple operations and fully extended and frequently taxed above its capacity even by these.

It has, of course, been suggested that at some stage of our evolution the fierce struggle for existence required that we should be able to seek food and avoid our enemies and that to meet these

urgent needs the new consciousness emerged. That is all that can be said. The whole culture which followed was incidental.

Now this is exactly the kind of conclusion which tells the plain man that his scientific brother has quite definitely taken the wrong turning. To me, indeed, the truth seems to lie in the diametrically opposite direction. Consciousness is no upstart, but, as it were, the survivor of an ancient and royal race, no lately co-opted partner, but the original head of the firm. No metaphor is adequate to express the supreme pathos of its present lowly plight. Its all but total disappearance into the abyss of the unconscious, whether caused by cataclysm or gradual subsidence, is simply the world's tragedy stated in psychological terms.

There has been a radical misreading of the evolutionary scroll. By general consent there was a graded series rising steadily to a certain point. But the subsequent degeneration was so marked that an earlier member of the series before this decay set in was incomparably more intelligent than the effete representatives of even the latest members of the series are to-day. An organism is judged biologically not merely by morphic perfection—that is, perfection of structure—but by adequate performance of function. And psychologically it should further be judged by consciously intelligent performance of function. Compare one of the great extinct reptiles, the brontosaurus, with modern man. We, no doubt, show some morphic advance. Suppose we give ourselves 100% for

structure and him 75%. As regards function I don't think we can claim 50%. I don't think any organ in our body is 50% efficient. And in respect of consciously intelligent functioning we couldn't claim one-tenth of 1%. Our intelligence wouldn't keep us alive for 30 seconds. If on my theory we allowed him 100% on the last two counts it is evident that he far outshines us. He was really a brainy beast, and that very phrase may indicate that brain power is not incompatible with sub-humanity. If the unconscious mind of even an elementary form of life were to leap into full consciousness a greater personality would be disclosed than Benito Mussolini or Adolf Hitler. If we compare the brain to an electric system of lighting, we may say that consciousness is the extent to which good connexions are made. Now it is obviously better to have a simple system in working order than a more elaborate one which through shortcircuiting or faulty connexions is all but useless. Our present brain and nervous organisation is a system in which connexions and insulations are alike wearing out. In early days the material was fresh and strong and the working was perfect.

What is called the 'foreconscious' contains all those facts which are readily summonable into consciousness at any moment, such as one's mother's maiden name. It is my contention that in the state of perfection or 'Golden Age' all the unconscious was in the foreconscious. The human mind would then have resembled an up-to-date

modern business office where everything is card-indexed and where the manager can immediately lay his hand upon anything that is wanted, instead of being as at present a chaotic lumber room where most things cannot be found at all and where other things come unsought and stay unbidden. This thesis admits of almost exact proof. All the states of supernormal consciousness produced by drugs such as coffee, opium or nitrous oxide, by fasting and religious practices, or those which have come to remarkable persons at privileged moments of their lives, show that our normal consciousness is but a small fraction of the whole. In these illuminated moments the mind is flooded with a 'cosmic' consciousness by virtue of which it is temporarily linked up with the whole universe instead of (as is the case in our uninspired moments) moving about in a world very imperfectly realised. The historical importance of such moments is enormous. Mahomet's 'visions' demonstrably changed the history of three continents over a period of thirteen centuries. But for the present argument the important fact is this. Supernormal insight is occasionally obtainable, it is even producible at will by the use of certain drugs. The only possible inference is that the machinery, so to speak, is there all the time. The drugs do not create that machinery any more than the filling of the petrol tank creates the parts of the engine which then begin to function.

So far, then, from consciousness being something which has emerged at an advanced stage of

the evolutionary process it appears to be a fragmentary survival of something more complete, perfect and all-pervading. I am convinced that at one time consciousness was actually co-extensive with function. We know at present that the acquiring of a new bodily aptitude requires distinct conscious effort. Is it not reasonable to suppose that the sum total of aptitudes which constitute the potential activity of the organism was acquired in a similar way?

The case is strengthened by viewing instinct in animals and man as lapsed or 'petrified' intelligence, to use a term current some years ago. There are numerous biological examples of instinctive types of behaviour, such as those of parasitic organisms, which show an intelligence, a diabolical acuteness, which any professional parasite of ancient Rome or lounge lizard of modern London might regard with envy. Furthermore, instinct in the race is rightly regarded as strictly parallel to habit in the individual. And habit is invariably formed with the maximum of consciousness, becoming later rule-of-thumb or secondarily automatic. The habits which are essential for driving a motor vehicle—operating gear changes, braking, accelerating or swerving to avoid other traffic, gaining of a road sense—have been acquired by intelligent and sometimes painful effort. The contrary assertion that instinct is a result of blind trial and error or of the survival of the fittest or most fortunate is like affirming that the sole cause of advance in the control of automobiles is

the elimination of those who have stepped on the accelerator in mistake for the foot-brake.

For many years there has been a keen interest on the part of psychologists in morbid states of mind. A great deal of modern psychology is psycho-pathology. Now this interest is itself, of course, not morbid but healthy, legitimate and useful. For in states of an organ usually classed as morbid we often see activity which is really hypertrophy of normal function, the organ in question having momentarily secured a disproportionate share of the total bodily energy. In the psychological sphere an individual is said to be normal when his reactions to ordinary mental stimuli—What is your name? What is the time? are of a standard type. In the abnormal person some of these reactions are lacking or on the other hand atypical and therefore interesting. Deficiency in one direction may be balanced by originality and exceptional efficiency amounting to genius in others. For example, a person who is intensely earnest about some form of religion may develop a neurotic flight from reality in many other departments, but his religious experience may be intensely interesting. And the fact that abnormal efficiency may suddenly be developed is the strongest proof that this efficiency has been latent all the time and that it has actually existed as normal functioning at some previous stage of our racial history.

I have lately given some attention to the psychology of genius, and in particular to the mental condition of scientific men when they were making

some new generalisation of value. And one thing struck me forcibly. These findings were not so much discoveries as re-discoveries. I had the same feeling myself when I stumbled on some slight novelty in one or two branches of mathematics. It was as if I were putting my hand on something which was there all the time. Some time before the discovery is made you feel you are near to it. You are like a child playing the old game of finding the hidden thimble when someone tells you you are 'warm.' Of course, this is simply the pet doctrine of Plato avowed by him in a rather mystical way that all knowledge is reminiscence. (And it is my contention that to obtain a really synoptic world-view we must fuse literature with science.) It is essential to my theory that the knowledge which underlies the bringing into being of the visible universe was at one time the conscious possession of the human race. The present universe may not have required infinite intelligence. But it obviously required intelligence much greater than any one of us consciously possesses. And I maintain that this knowledge is contained in the unconscious mind of each of us. This statement is the scientific translation of the theological assertion that everyone possesses a soul of infinite value. Now religion, exoteric but specially esoteric, has in all ages aimed at the soul's re-awakening. Fasting, prayer, trance, ceremonial ritual, greater and lesser mysteries, have been directed toward the production of a mystical moment wherein knowledge and vision are attained. After this the person is an

initiate. He has attained the supreme human experience. And this experience is essentially an opening of new regions of the mind. But these regions must have existed already to be capable of being opened up thus suddenly. Herein consists the proof that the race has fallen from a state of clearer and fuller consciousness. Such a mental crisis has probably occurred in most remarkable men. It need not be of a religious character. The Faust-like student may see life in the more vulgar sense awaiting him, even the long-handicap golfer may enjoy visions of becoming a scratch player. Specifically religious experiences are marked not so much by the discovery of new truth as by the coming into extraordinarily vivid consciousness of a number of view-points which were hitherto neglected. It is this vividness of experience which gives the sharpness and dogmatism to the convert's mental attitude. He knows intuitively what is true. But other persons have experienced with equal vividness contradictory aspects of truth. Hence the clash of convictions on the part of those who despise argument when intuitive certainty has been, as they think, attained.

So, from whatever aspect we view the subject, it is impossible to avoid the conclusion that the consciousness we have now is not the completed result of an age-long process of evolution, but the fragmentary survival of that which at one time was actually co-extensive with function. The problem is not to explain why some acts are consciously done, but why any are done unconsciously.

Of abnormal mental conditions the dream and trance states are most interesting and have been most extensively studied. In both we have mental activity cut off from perception of the external world, the traditional five and other outward-looking senses being temporarily in abeyance. On the assumption of a constant sum of nervous energy, which in dreaming is switched off from seeing, hearing and so forth, it is only natural to expect that certain internal senses should function more adequately. And so we find the capacity of picturisation, of vivid representation of past images, present to a degree impossible in waking life. We can revive the image of persons, of landscapes, of streets which elude our waking memory. We all possess a faculty in dreams which perhaps a few painters with exceptional aptitude for detail enjoy at other times. Dreams are films shot by the cine-camera of the unconscious mind in waking life, pieced together with no little ingenuity, possibly even censored (according to Freudian theory), and presented to the sleeping ego.

Trance conditions are similar to those of dreams, except that one or more of the external senses are operating. The subject may hear, speak or move voluntary muscles. A rational conversation may be kept up as in hypnotic or somnambulistic states, questions put by the experimenter being rationally answered. In these cases, too, there are many examples of super-efficiency of functioning. I have heard a hypnotised boy do arithmetical calculations much more rapidly and accurately than when

awake, and obtain mentally results for which his waking self would have required pencil and paper. The explanation would be the same as before—nervous energy attaining a maximum concentration. In ancient times trances and dreams were appreciated not merely for their interest but for their value. The words spoken by priestesses in Delphi were held to be inspired and veridical. In our times automatic writing is regarded as remarkable psychically, but only rarely as valuable. Its explanation lies in the fact that in certain individuals ideas may reach more easily the motor centres which control writing than the speech centres through which they would receive verbal expression. And the host of phenomena for which psychic reseachers have vouched seem to indicate latent power, hyperaesthesia of various senses, which are so remarkable as to merit the name of occult. Regarding the voices heard by mediums under trance conditions there is, of course, great difference of opinion. If we adopt the sceptical attitude and do not attribute them to the activity of disincarnate spirits we must regard them as reproductions of actual voices which the medium has consciously (or more probably unconsciously) heard in the past. An idea or sense-impression from the past strikes us. Most of us, for example, have fancied we heard our name called. The medium's skill would then consist in selecting a voice to correspond with the inquirer's requirements. The truth regarding mediums is, I think, this. They have at the outset of their careers pos-

sessed somewhat unusual powers. The exercise of these powers has brought them (besides the pleasure associated with high mental efficiency) a certain amount of fame and fortune. Rather than sacrifice these, disappoint their circle, or forgo their only means of livelihood, they descend to employing trickery to produce the results which were originally obtained by genuine artistry the nature of which was as little understood by themselves as by others. They are in the position of a literary craftsman who has written himself out but who still writes at the behest of his public, his publisher, or his pocket.

I daresay most of us could tell of one or more instances in our lives of slightly supernormal experience. One such lives in my memory. It was a fairly typical example of clairaudience. At the crisis towards recovery of a long illness I seemed to hear a voice speaking to me. It was the most startling experience of my life—at first terrifying, then thrilling. The voice continued for roughly an hour, then became progressively fainter, recovering once or twice before fading below the threshold of audibility, the whole process being roughly analogous to the failure of an electric circuit in maintaining a system of lighting or radio reception. The phenomenon recurred twice in a much less marked form after intervals of twenty-four and forty-eight hours. The voice spoke in concise sentences with slight rhythmic pauses. It cleared up certain problems upon which I was working at the time, and made one or two uncannily accu-

rate predictions relating to my future. It was accompanied by an indescribable sense of physical well-being, and by well-marked hyperaesthesia of various senses, particularly that of hearing. It seemed in no way abnormal or even supernormal, but simply more or less perfect working of brain and body, tolerably adequate neural and cerebral efficiency. In fact, the general impression made thereby was that my ordinary mental and bodily state was pathologically subnormal.

After due allowance is made for natural exaggeration in personal reminiscences there remains an irreducible residuum of such experience which compels the conclusion already reached that our race has at one time enjoyed a complete and integral consciousness which now emerges on very rare and privileged occasions and which at ordinary moments is present only in an incomplete and fractional form.

Psychology.

(2)

I further maintain that this integral and unifying consciousness was purely intellectual and that emotion is simply unconscious thought, being composed of cognitive elements which have been unable to force themselves into consciousness. Take the case of a strong and essentially typical emotion, that of fear. A child brought to a psychological clinic was described by his mother as suffering from peculiar terror of anything sharp—a sharp

point, not a sharp edge. This phobia was traced back to a night in infancy when his 'binder' was secured by a safety pin which was clumsily fastened and penetrated his flesh. Being asleep, he did not take any notice of the injury by cry or protest. Yet the cells thus injured were sending clamorous messages which beat against the doors of consciousness in vain till the morning, when the sight of the pin was consciously associated with the accumulation of neglected distress signals. It is the confused memory of these indistinctly apprehended messages which constitutes the emotion. When the occurrence was brought back into the boy's consciousness the emotion disappeared and was replaced by a normal and rational interest in safety pins as intelligent contrivances only accidentally functioning as instruments of torture. Fear is in general roused by the unknown. An increase of knowledge dissipates that fear. Were emotion radically different from thought this intelligent resolution would be impossible. I foresee, however, the objection that there are many pleasant emotions whose resolution into thought elements would result in a very sad loss. Let us, then, take the emotion with which we regard a nice juicy beef steak. This depends on a number of previous experiences. If these experiences could be more clearly recollected our pleasure would obviously be enhanced, not diminished. But it is easily demonstrated that the emotion is built up of recalled cognitive elements. For an infant's reaction to a beefsteak as an edible object is

entirely neutral. As he gets older the feeling tone is step by step acquired by gustatory experiences which are imperfectly recollected and become fused into a general mass. In the case of the vegetarian purely intellectual considerations may change the feeling to one of disgust—again an impossible result if emotion is fundamentally non-intellectual. The difference in attitude on the part of different individuals to, say, a bottle of stout is based on different cognitive experiences. This is, of course, the contention of the behaviourist psychology that emotions are conditioned reflexes.

The goal of psychology, though extremely difficult in practice, is in theory extremely simple, to transform emotion back into the rational elements of which it really consists. The tangled skein must be unravelled and the threads rearranged in a beautiful and simple intellectual pattern. And our modern world is making some progress towards this goal. Pure emotion is becoming more and more a thing to be distrusted. The day of feeling is past, that of logic and common sense, of accurate facts and sound arguments has arrived. Even a powerful orator who switches our minds on to the emotional plane is felt to be merely confusing the issue and postponing the real solution of the problem. The speaker who has a good case usually presents it in a clear and straightforward way. He has the simple eloquence of truth. On the other hand, deficiency in argument is cloaked by specious rhetoric, or by an appeal to passion.

We can hardly find serious fault with the oft-

quoted definition of virtue as the control by reason of passion. When reason is contrariwise called to subserve the ends dictated by passion we have all the essentials of vice and crime. The technical side of crime possesses, of course, a sheer intellectual fascination like that of a chess problem. Hence the subtle appeal of a well-constructed detective story to many mature intellects which cannot tolerate other forms of fiction, and the universal interest aroused by the latest criminal reports appearing in the press. A study of the methods of perpetration and detection of crime is a liberal education. It is only when the cloven hoof of passion appears that the diabolical side of the criminal comes into view.

Further, it is through the addition or setting free of intellectual elements that the real sublimation of undesirable passions becomes possible. The intellectual sadist may become a surgeon, the intelligent voyeur (for whom the female form is an obsession) a sculptor or painter of the nude. Conversely, it is through the loss of intellectual elements that these predominantly emotional states arise.

According to this view the ordinary psychological trinity, thought—feeling—will, or intellect—emotion—volition, or cognition—affect—conation is ultimately resoluble into a unity of an intellectual nature. This resolution would have been accepted long ago were it not for the oft reiterated commonplace that the dynamic of the mind is non-rational, that the hormic urge is biological rather than intellectual. We all know Aristotle's dictum that thought alone

has no motive power. Yet these assertions are based on an obvious confusion of the distinction between the intellectual and the non-intellectual with that between the conscious and the unconscious. We have no reason to doubt that just as mneme (unconscious memory) is quite as rational as conscious memory, so horme (unconscious urge) is quite as rational as the operation of conscious will in the case where we set some distinct purpose before us and strive intelligently to attain it.

According to the general theory set forth throughout this book there was a definite time when the unconscious did not exist, when the flashlight of consciousness which burns low enough at all times, which flickers feebly in mental disease, and which is apparently extinguished in dreamless sleep, illuminated every nook and cranny of the mind, and every outlying region of the body. But now, if we wish information concerning most of the bodily functions, we must invoke the aid of the physiologist.

A faulty distinction is often made between the sciences of physiology and psychology. The true and simple distinction is that the subject matter of both is the same, but their methods of getting into touch with it are different. Both deal with the body-mind, but the former studies it externally, the latter internally. Any mental state can be investigated by the physiologist so far as the physical counterpart can be identified, any state of a bodily organ (or modification of such organ as the result of the impact of the outside world)

by the psychologist so far as the report is received by consciousness. The present limitations of both are obvious. Certain aspects of brain functioning can only be studied psychologically. Also physiology suffers from the disadvantage of having to interfere with the normal exercise of function in order to grapple with its material, and psychology has to deal with isolated fragmentary reports from unidentifiable regions of the body. Yet the precise technique employed by modern analytical psychology has considerably extended the field which may be surveyed from the internal view point. And the perfecting of X-ray photography has enabled the surgeon to explore painlessly deep seated tracts within the body.

The above distinction may be otherwise and perhaps more clearly expressed by saying that one science gains knowledge of the organism by the use of outward looking senses, particularly those of sight, hearing and touch, while the other uses the internal or organic sense. The former has achieved much more nearly the character of an exact science for several reasons. First, the precision of the outward senses can be vastly increased by the use of scientific appliances like the microscope, stethoscope and piezometer, whereas no means yet exist of aiding the organic sense save the stimulation of the organ under investigation. Second, the external method of psychology is the same as used by all other sciences, while the internal avenue of approach is closed in the case of everything except the higher organisms. We

cannot ask a newly discovered alloy to give an account of itself. Psychology as a science thus stands alone. Third, psychological elements are not quantitatively measurable. Indeed, for the purpose of the Weber-Fechner law, which asserts that to increase sensation by a given amount the increase of stimulus must be proportioned to the existing stimulus, a unit of sensation is defined as the minimum perceptible difference. This, of course, varies with different percipients and at different times. The law itself was possibly Fechner's generalisation from the theorem of acoustics that an octave interval is always obtained by doubling the wave-frequency. It is seldom exact, but it expresses a rough general truth that equal increases of stimulus produce diminishing increases in sensation. If at an evening party I take out and fire one pistol I not unnaturally produce a sensation. If I had fired two pistols the sensation would not have been doubled. Yet if I were wearing two essential garments the removal of the second might produce a greater sensation than that of the first. It is thus made clear—although by a frivolous example—that psychology does not allow the precise formulation of law in the quantitative terms beloved of the physical sciences. Yet this is not an indictment of psychology. It merely shows that the complexity of the subject matter is such as to make the nature of the response highly variable and therefore interesting. According to the theory sketched in this book the stereotyped behaviour of the physical world is that of a corpse from which life has

receded. The vital energising spirit has departed and in its stead reigns the dull deity of universal law. Yet even here the uniformity is less monotonous than was supposed by a past generation. Chemistry has now its isotopes—elements once thought completely similar, but now discovered to be dissimilar in certain fundamental respects. And in the structure of the atom we meet Heisenberg's curious principle of indeterminacy, according to which the attempt to fix within narrow limits the position of an electron leads to a great increase in the possible error in determining its velocity and *vice versa.* (This is possibly one of those paradoxes appearing in mathematics which disappear when a truer theory has been formulated.)

But, on the other hand, it is obvious that where pure indeterminacy reigns no science in any sense of the word is possible. There must be a sufficient amount of uniformity, a sufficient number of invariable sequences, to establish the nexus between cause and effect. There must be a fixed and generally accepted terminology as definite and precise as the nature of the subject permits. During the past thirty years a great development has taken place within the science of psychology due to many workers, but most of all to the Viennese professor Sigmund Freud. His principle of the continuity of the conscious and unconscious mind and his recovery of a mass of buried material have made it possible for him to postulate a cause for every psychical phenomenon and demonstrate the reality of determination in the mental sphere.

Like Newton, he has evolved order out of chaos. He is the first psychologist to propose a satisfactory nomenclature. From thousands of clinical examples he has set up a norm of mentality and indicated how deviations from that norm can be detected. He has shown how to restore normality by a process of mental re-education. Many of his particular conclusions are incorrect and even ridiculous, but his method is fundamentally sound. His discoveries are interesting as extending the domain of mental causation into the physical sphere, and forming the natural complement to the discoveries which have extended the domain of physical causation into the mental sphere. Both illustrate my fundamental thesis that there was a time when the mental and physical were united throughout the universe.

Psychology.

(3)

By the man and woman in the street Freud will be remembered chiefly through his insistence upon the far-reaching effect of sexual motives. In this sphere undoubtedly he was a pioneer and a specialist. Until recently a vast domain was ignored by serious investigators, and the natural reaction has been that it has since been explored almost *ad nauseam*. In past years there were some questions which even the medical man in the privileged atmosphere of the consulting room failed to ask. Then some practitioners of the new school failed to ask

any others. It was something like the swing of the pendulum regarding the therapeutic value of alcohol. One generation of physicians prescribed port, the next generation abstinence from port, as a panacea for every human ill. We are only too well acquainted with the specialist who traces every disease to functional derangement of the organ of which he has expert knowledge. In psychological medicine the lasting effect of the wider outlook is to admit a sexual etiology when such is obviously indicated—perhaps in 20% of the total number of cases treated. Freud's obvious justification is that the facts which he has brought to light are rapidly becoming part of the stock in trade of every enlightened medical practitioner, to be used for the betterment of humanity.

In treating this festering world sore the only reliable antiseptic is knowledge, more knowledge, and yet more knowledge. If all the knowledge, physiological and psychological, extracted by each human being from his or her several experiences were pooled and made available for all, it would still be insufficient. Censorship is just a device to dam(n) the living waters and the souls of men and women. The details of breach of promise, divorce and nullity suits and of police court crimes are—even in the much-maligned Sunday press—not over-elaborated, but shockingly vague, meagre and inadequate.

The repressive attitude of parents and teachers in Victorian times bred a loathsome hypocrisy in the young female of the species. If the evidence of

a past generation may be believed, the Victorian virgin, after squeezing almost the last drop of sensation out of the whirling rapture of the waltz, blazed with virtuous indignation at the slightest overt violation of the proprieties. No liberties of speech or gesture were permitted. Stories with direct allusions to forbidden topics were taboo. Indirect suggestion became a fine art. Our fathers saw double and heard double. *Double entente* and diplopia flourished side by side. The gentlemanly code of honour imposed a vow, not of chastity, but of silence. We know the famous story of the Victorian gentleman who, when asked whether he had kissed a certain girl, replied, " No," and, after a pause, " but, if I had, my answer would have been precisely the same." The gentleman kissed and didn't tell, the cad kissed and told, the braggart didn't kiss and told, the worm did neither.

Yet the Christian Bible was to them a valuable source of information. In particular the story of the virgin birth of Jesus was instructive as well as morally valuable. The Christian maiden preserves her virginity (biologically to become a good mother) under the spiritual stimulus of the noble example of the Blessed Virgin. No more delicate and yet illuminating method of introducing the young girl to the subject of sex and motherhood could well have been devised. It is a pity that as a doctrine its credentials do not bear minuter scrutiny. And some persons think that the Victorian reticences, half-truths—or even untruths—are preferable to the modern passion for stark reality.

But in the opinion of those moderns who, like myself, hold nothing sacred save truth, nothing valuable except what is founded on fact, the time for such well-meant falsehoods is past. Having, like the stork, served their day and generation, they should now fall upon an eternal sleep. The time is come to cleanse the Augean stables of the mind with waters flowing from the living fountain of truth. For, to continue in metaphor, our sanitarians of the last century did not really clean the room, they merely swept the refuse into a corner. They shut tight the windows lest any fresh breath of heaven should disturb a particle of the rotting dust.

In this matter clearness and sanity are delightful and refreshing, but still as rare as roses in April. Until recently all of us, including our leaders, ecclesiastical and even medical, were either dumb or mad. The general attitude was calculated to make the true philanthropist stamp, rave and blaspheme. My own attitude was so radically different from the conventional attitude of my neighbours that in the muteness of despair I gave up discussing the question altogether. But now the taboo has been lifted, thanks to the war and to the modern bright young persons. They know that their fathers and mothers were just terribly mistaken about one important matter. Youth is not wicked. It is merely logical. It cannot believe the calumny that love is wrong. For what true lovers desire is fusion of spirits and of bodies complete and entire, that, in the beautiful language of Jesus, "they twain

may be one flesh." But it is the simultaneous fusion of minds which make possible the bodily union. The latter is trivial by comparison.

Unfortunately in our degenerate modern times undue stress has been laid on the presence or absence of the physical union. The Christian church has been perhaps the worst sinner in this respect. The general attitude is a kind of inverted materialism. The Greeks saw with clearer and with purer eyes. For them the physical sex need was just like hunger or thirst, an appetite requiring periodic satisfaction to preserve bodily health and mental sanity. But on the spiritual side Eros stood for the hunger and thirst after truth, goodness and beauty. Our modern vulgarised 'Platonic' love stresses merely the absence of the physical, Plato stressed the presence of the spiritual. The true union is the marriage of minds, the co-operation of two persons in a great intellectual, artistic or moral adventure. Such an ideal friendship may be helped but should not be marred by the sharing of an exquisite moment.

But, while keeping the ideal in view, we must come down to the realities of practical and unideal life. "*Il faut s'abêtir,*" said the wise and gentle Pascal in a slightly different connection. Theoretically every act of love should, like every meal, be a sacrament. But the busy city man must occasionally snatch a sandwich with necessary irreverence just to keep body and soul together. So even the frankly amorous glance, the dulcet whisper of a caressing voice, the touch of an

ungloved hand in the dark, are gifts for which we should be thankful, for they help us on our toilsome way.

But what is really reprehensible is the present incredible vulgarisation of the whole subject. Unfaithfulness, obviously a mental quality, means in our unpleasant legal phraseology a physical act. Immodesty, which should mean an exaggerated estimate of our own mental and physical qualities, is often limited to the failure to conceal a sufficiently large percentage of the surface of the body. Indecent, which means simply uncomely and is applicable to a bald head or a red nose, is habitually understood to have a sexual reference. To call a woman good because her conduct in certain respects is negative is an insult to all women, because it implies they are good for only one purpose. The restricted use of the word 'immoral' is itself the quintessence of immorality. The adjective 'filthy' applied in this connexion is apparently a legacy from the time when even the leisured classes did not wash the whole body daily. It is now simply meaningless. It obscures the necessary differentiation between normal and abnormal functioning of an organ. If all erotic acts are filthy, what becomes of the distinction between healthy and diseased conditions, between sexual psychology and pathology? The latter distinction is recognised in schoolboy slang when an objectionable thing or person is termed 'septic.' By and by we shall no doubt discover that all (and not merely some) bacteria are friends and not enemies, that the

tubercle bacillus, for example, enables us to carry on under otherwise impossible conditions by the breaking down of pulmonary tissue. Then truly shall evil have been chased out of its last stronghold and only good remain.

It will be, of course, objected that this discussion obscures the still more vital distinction, that between good and evil. This has been precisely my intention. For I sincerely believe that the traditional Fall involved the eating of the fruit of the tree of the knowledge of good and evil in the sense of the unwarranted introduction of evil as a positive concept and not merely the absence or negation of good. Take as physical analogies the pairs of opposities, light and darkness, heat and cold. What man of science would say that light is the absence of darkness as darkness is the absence of light, or that heat is the absence of cold as cold is the absence of heat? Absolute darkness is simply the cessation of transverse electro-magnetic vibrations in the 'ether' just as absolute cold is the cessation of molecular vibrations in 'matter.' So evil is simply the cessation of brain-waves coming from the source of all thought.

It may be replied that we cannot make a thing evil by calling it so. I assert that we can. I append a simple illustration closely connected with the present subject. For a reason suggested above we have in the past regarded the evacuation of bladder and bowel as disgusting. An infant's mother or nurse, under the influence of this perfectly unreasonable complex, gets annoyed with him because

these needs are frequent and urgent. A trauma or wound is inflicted on the delicate nervous organisation controlling evacuation, and life-long urinary trouble or constipation is the result. Our hospitals are full of persons whose diseased condition is ultimately traceable to intestinal auto-intoxication. Could any instance make clearer the diabolical possibility of translating the thought into the reality of evil?

The problem that the Victorian age—like all previous ages—failed to solve was that of prostitution. But our fathers did not realise that what made the problem insoluble was the almost total failure of marriage on the physical side. So they merely tinkered with the symptoms, or even pretended there were no symptoms, without really tackling the disease. They honestly believed that the timid shrinking maiden whose natural instincts had been starved or suppressed, whose ignorance of sexual wisdom was unrelieved by a spark of maternal enlightenment, could suddenly on her wedding night by a mysterious and magical sentiment be transformed into a very goddess of love. As well might one expect a youth who had never before handled a tennis racquet to win laurels if invited to play on the centre court at Wimbledon. No wonder men preferred the champagne of the courtesan, the cocktail provided by the married woman of roving instincts, to the small but wholesome beer of domestic happiness.

Of course, the Victorians had their theory. It was that girls should be 'innocent.' Having no

knowledge, no emotions, no desires, they were intended to submit entirely to the whims and caprices of their lords and masters. But the physical expression of love depends on mutual spontaneity, or coincidence of desire. There is no two-part harmony if one part be suppressed. Such marriage is simply legalised prostitution. The Victorian needed not to go abroad to find vice, he had it at home. In such an atmosphere, amid such a ghastly caricature of what love should be, was the present generation born and reared. And they are pathetically asking, "Is this mistake to be repeated?" They want—not unreasonably—to do the best with the bodies which God has given them.

The above paragraphs may serve as a sample of the criticism indulged in a decade ago of the Victorian attitude towards sex. But the argument, though apparently conclusive, does not quite touch the root of the matter. And the boasted emancipation, the sexual freedom, which the present generation has achieved is discovered to be a Pyrrhic and a pitiful victory. Theoretically, indeed, the triumph is as complete as that of the Allies in November 1918. But the results are almost as nugatory, the fruits almost as difficult to harvest. The blue bird of happiness is as far off as ever. Our parents failed to solve the problem because under present conditions the problem is insoluble. It has for a long time seemed to me that in the tangled skein of the universe the knots hardest to unravel are those of sex and immortality. The

complete resolution of either would in all probability yield simultaneously that of the other.

To my mind there is just one way of making sexual phenomena intelligible. It is to regard the existing zones of heightened sensibility in the body as survivals from a time when such sensibility was present in every part. This is, of course, the basis of Freud's doctrine of eroticism. It is not that some nervous centres are hyperaesthetic, but that most centres are pathologically anaesthetic. There is a curious literary vindication of this scientific doctrine. Milton makes Raphael describe love among the angels in the well-known words:

> "Easier than air with air, if spirits embrace,
> Total they mix, union of pure with pure
> Desiring; nor restrained conveyance need,
> As flesh to mix with flesh, or soul with soul."

Our modern problem is not the presence of Eros in the narrowest sense, but the absence of Eros in the widest sense. There is, in fact, no reason to believe that the sexual instincts are in the normal individual at the present time too strongly developed. It is only because they are weak that audiences tolerate the feeble profanation of love's most sacred mysteries which occurs nightly on stage and screen. But, because other interests are often almost non-existent, the interest in sex is sometimes disproportionately strong, and therefore constitutes an obsession.

In the golden morning of history there was apparently a perfectly blameless promiscuity. There

was the simple love of all for each. We catch echoes of this in the appearance of 'free love' communities, in certain eccentric religious organisations, in midsummer carnivals, in midwinter saturnalia, in primitive dance orgies, perhaps in our modern "Paul Jones" with its rapid and random interchange of partners. Birth was not necessary on a large scale because death was not yet. The human race was a family in numbers as well as in mutual love. All nature was knit together by the closest bonds, because all nature was sentient and organic. The fountains mingling with the river, the waves clasping one another, the moonbeams kissing the sea—all the whimsical flights of Shelley's fancy—were once literal and beautiful fact. The nature poet recalls all this early reality, which still survives here and there in the bee's kiss of the pollen-laden flower or the clasp of the ivy around the oak. The love of man and woman in Paradise depicted by Milton is just part of the exquisite mutual dalliance of an unfallen world.

In the first period of degeneration the harmony of nature has been lost. The universal mother becomes harsh and cruel. Giant figures occupy the stage in whom intelligent love has given way to unintelligent lust. One by one these great ones feel the power of dissolution, grow weak and die. We hear the bitter cry of agony from the forest, "The great god Pan is dead." Of this cry many wholly fantastic explanations have been given. The simple 'explanation' is that there was a great god Pan and that he did die. Though terrifying in form and

speech he was a joyful creature and the world was poorer for his loss. During this epoch mortals and immortals existed side by side.

In the second period the immortals have departed. The creative power is gone. Reproduction on a large scale becomes necessary—the mass production of inferior individuals. A man and woman form a temporary alliance lasting for two or three years—just long enough to secure the birth and care during the period of helplessness of a single child. This stage is preserved for us in the tendency of modern couples to separate and seek new partners after a similar period.

In the final stage the lengthening span necessary to fit the offspring for the business of living makes permanent unions desirable. The sex impulse is carefully husbanded and nourished by secrecy and restraint until its expanding brings together a suitable pair. Then in the ecstasy of falling in love they catch momentary glimpses of that translucent dawn when men and women walked the earth as gods.

CHAPTER V.

Folklore.

In three directions the received evolution theory seems to err. First, in assuming that progress was achieved without intelligence; second, that such progress exists to-day; third, that this process was uniform and was not interrupted by some great catastrophe. This brings us back to the theory of a Fall. To most people the very word connotes the narrow-minded dogmatism of persons of a past generation, in whom zeal outran intelligence. Yet until recently divines have held the reasonable view that Augustinian theology was proved, not merely by ancient writings (held to be sacred), but by a thousand facts of human experience. The original stamp or divine image though sadly marred was still discernible. Such a theory requires that at some former time mankind and living beings in general reached a height from which they have declined. Now, curiously enough, all early records concur in supposing the existence of heroic times. The further back we go the more god-like are the figures which occupy the stage. Even in films possessing ancient and modern portions the ancient part breathes a majestic atmosphere which accentuates by contrast the commonplace quality of

modernity. The themes of the great epics, the great dramas, the great operas, are founded on the sagas of pre-history. We read Homer and Milton because we cannot produce their like. And it is notorious that even the greatest genius cannot invent a new myth. Aeschylus, like Shakspere, stole his plots. It therefore follows that these mythological events did actually happen (and it is a conclusion which I have most unwillingly reached), or else that the story-shaping powers of our ancestors were vastly greater than ours. In either case their minds are proved superior. From the horns of this dilemma there is no obvious escape. The common psychological explanation of the Golden Age as fiction is facile but superficial. It is suggested that our wishes run ahead of actuality and that we picture to ourselves a world moulded nearer to the heart's desire, and that we then objectify this dream of ours and locate it, not in the future to which it properly belongs, but in the past where it has no right whatsoever. This would demand a fertility of imagination far beyond that possessed by our race.

But it is at once objected—If a heroic civilisation existed, why do not more distinct vestiges survive? Where are the mighty buildings, the great engineering works, the records on stone of the super-past? The obvious answer is that in this bygone idyllic state men did not long for such memorials. In their presumably Arcadian existence they wanted no material records. They probably had neither houses, buildings, or even writings. It is the weak-

ness of man's health that calls for shelter, it is the weakness of his memory that necessitates the written word. In Freemasonry I understand that Grand Lodge disdains the use of writing, conserving thereby an ancient and sublime tradition. I need not mention how many historic civilisations have passed away with scant legacy to posterity, even of their artificial material accompaniments. A few fortunate accidents have preserved to us those of the Greeks and Hebrews. Other still more subtle and beautiful manifestations of the human spirit are completely lost, gone like the snows of yesteryear. For psychic events notoriously leave no traces.

At what point of time are we to place the termination of this Golden Age? Just at the point where the first signs of deterioration appear. These are exploitation and death, the essential moral and physical evils. By exploitation I understand, of course, the using of others as means to one's own advancement. If sin entered into the world and death by sin, the most far-reaching description of sin is just exploitation, or the turning of another to serve no longer his own ends but yours, the depriving another of the right to live his own life. The crime of murder is an extreme instance. Originally humanity was, in Kant's famous language, a kingdom of ends. Since then kings have exploited subjects, free citizens slaves, men women, women men, in all ages the rich the poor, for the past 100 years (according to socialist doctrine at all events) capitalists workers. And when we look further down

the organic ladder we see everywhere the higher forms of life exploiting the lower and sometimes *vice versa,* as in the case of parasitic organisms. Man has domesticated animals and plants, and exploits them for transport, clothing and food or (as with pets) for amusement and the society he is unable to get from his fellow-man (this last being, perhaps, a relic of earlier and brighter days). The domestic hen is kept, not for her own ends (if in her degenerate state she has any such), but to give herself or her eggs or her chickens to our tables. Once she, like other feathered fowl, flew free. Now she has sold her birthright for a mash of buckwheat. And her degeneracy is put in evidence by her flesh, which is inferior in firmness and flavour to that of the average game bird. Indeed to the lover of wild life the poultry yard is a pathetic spectacle of prisoners reared in captivity who are, except for brief moments when a wild restlessness pulsates beneath those all but useless wings, entirely oblivious of their chains. And, again, we feed on vegetables grown under artificial conditions. The highest function of the lettuce is now to make edible salad. Of course this exploitation has long since become necessary because human life cannot be maintained on an inorganic dietary. And there are still certain definite inhibitions. Dog does not eat dog. It may be that the simple law of the survival of the fittest decreed the extinction of those canine communities in which this rule was not strictly observed. Probably our race has just emerged from the

lowest conceivable stage—that of universal exploitation taking the form of cannibalism, the single exception made being that of sparing your friends, the members of your own tribe. Under these conditions the man of highest virtue was the Papuan chief who thanked the Great Spirit that he had no enemies—he had eaten them all.

I have already distinguished, in the chapter dealing with biology, between organism and machine. But an important further distinction must be drawn. In organism every part still more or less serves the originally appointed end. While in a machine the material is diverted from its original purpose and made to serve an entirely new end, generally an artificial necessity created by the increasing weakness of man. Thus builders exploit organic and inorganic nature to produce the enduring monuments of an ephemeral generation. Trees are cut down, stone and metal dug from the earth for memorials. The supreme handiwork of Nature is destroyed that the inferior handiwork of man may become. The defacing of natural scenery mourned by lovers of beauty during the rise of factories is an essential characteristic of all such development. The psychological appeal of Rousseau's quite chimerical return to nature, the hatred felt by persons like Ruskin and Morris for the industrial revolution, have their source in a deeply seated racial memory of a time when intelligence designed the raw material as well as the finished product, when civilisation had not yet appeared as a cicatri-

sation making ugly scars upon the fair smooth brow of Nature.

In the early and perfect state there is no preying, no exploitation. Man lives under the open sky and sleeps beneath the trees upon the mossy bank. His slumber is light as an infant's. While it is yet dark he awakes full of a secret exaltation and chants songs before sunrise. Shaking from his locks the dews of the night, he gazes with comprehending wonder at moonset and sunrise. With the shortening shadows he rises and effortlessly bounds over the plain, rejoicing as a strong man to run his race. The exhaustless energy of his own body gives him the swiftness of the teal in flight. He watches the sun climb to the meridian and at high noon lays him down. Movement is exhilaration and rest is ecstasy. By day he basks in the sun's radiance, but sweeter still by day and night he basks in the radiance of the Divine presence. By a fresh token every hour he knows himself the son beloved of God, nor ever tastes the desolation of Calvary. Wave after wave of thought sweeps through his brain, surge after surge of pleasure through his body, leaving him satisfied yet unexhausted. Life is wild, mad, thrilling, breathless yet at the same time sweet, holy, calm and peaceful. He would fain pray but that his wish is granted ere he has time to frame the petition. Every moment he is torn between exultant joy and humble devout thanksgiving. Sometimes he deems that he himself is God, but restrains the thought, knowing that way madness lies. At other times he

feels like a violin played by the master, or a leaf sensitive to the slightest whisper of the Divine breath. Clothes he disdains, revelling in that first naked glory. Like Jesus in the wilderness he knows not hunger or thirst, but as it were the presence of ministering angels.

To descend to more prosaic levels, it is evident that under such circumstances exploitation of any kind whatever would have been impossible, even unthinkable. Man is one with nature and with nature's God. Bird, beast and flower are his natural and covenanted friends. He is in league with the stones of the field. To take food or clothing would be callous cruelty or unthinkable sacrilege. Hence the legend that skins and even fig leaves were not used till after the Fall, when men and women began to question the good taste of their Maker in the matter of exterior decoration. Hence also the attitude of religions like Buddhism towards the taking of life, and the practice of Eastern devotees in eschewing as far as possible food and dress. The fact that this is recognised as a holy custom compels the inference that the backward reference is to an age not of primitive savagery but of intellectual and spiritual perfection. The respect which the Indian university student of to-day who has outgrown religion in the ordinary sense retains for these ascetics demands no trivial explanation. The cow is a sacred animal, not merely for the obvious economic reason that its manifold uses required its preservation, but because at one time all animals were held sacred and their

persons, if I may use the term, were inviolable by man. Certain rites still survive which even in their modified form indicate clearly enough that what we should regard as a perverse link once commonly united men and animals.

And it is clear that our perfect man would shrink from destroying the higher work of art such as a tree in order to produce the lower work of art such as a table or a book. Just as the need for writing connotes mental decadence, so the obtaining of material for writing requires the breaking of the pact with nature. And the making of lethal weapons implies intellectual as well as obvious moral retrogression. The substituting of tool-using animal for rational animal (*homo faber* instead of *homo sapiens*) as a definition of man contains a radically false implication. For pristine man would not only have no material for tools, he would have no use for them. They would be less serviceable to him than a corkscrew to a teetotaller. Hence when artefacts of any kind, and in particular weapons or tools, appear the golden age is definitely past.

Sane idealism regards the world around us in its entirety as the concrete product of the highest form of intelligence, just as its artificial portions are the obvious products of a lower form of the same intelligence, which, of course, is powerless to do aught except reshape existing material. It is curious that the philosophy of primitive races which we call animism postulates an immaterial double for every material thing. From the strictly scientific viewpoint this duplication is justified. Everything *has*

a double—nothing ghostly or supernatural in essence—but simply the principle in accordance with which the thing is constructed. The architect's plan, elevations, and specification constitute the double of a house, the principle of constant distance from a fixed point the double of the circle or the sphere.

In organism intelligence is never divorced from its product, so that in this internal creation we may suppose the peculiarly intimate relation with intelligence preserved. The whole world would then be organic, the difference being only of degree. It is, perhaps, worth noting that early myths and religions treat all inanimate aggregates as persons possessing organic unity. The earth, the planets, the sea, rivers, the sky are personalities—gods and goddesses. The usual but not very convincing explanation is that primitive peoples in personifying objects are explaining the unknown inorganic by means of the known organic as exemplified by themselves. I am convinced that the true explanation is that at one time—fanciful though it may seem—these objects had consciousness and the unity which makes personality. It was no empty figure of speech to lie in the lap of Mother Earth, or to pray to Father Neptune or Father Tiber. This unifying consciousness has ebbed away and is now found only in the cerebral cortex of man and of the higher animals during certain parts of the day and of their lives. Poets still personify because they retain that cosmic feeling of the unity of all nature. It is also worth noticing that

children regard all objects as animate. Their suffering is alleviated by the punishment of the table which has hit them. Again, at the risk of appearing arbitrary and fanciful, I would suppose that we have here a clear instance of racial memory—memory of a time when, in the words of the Greek philosopher, everything was 'alive and full of gods.'

The next argument in favour of the theory that there was evolution up to a certain point in time (followed by a Fall bringing universal deterioration) is the precise nature of the evidence contained in all ancient records. Tradition speaks with no vague or uncertain voice. The Hebrew record affirms a swift catastrophe followed by slow progressive degeneration measured quantitatively by diminution in longevity. First of all, the narrative speaks of life theoretically infinite, then of a breaking of the perfect inter-relation of intelligence and matter or God and man, then of antediluvians whose lives varied between 500 and 1,000 years (Methuselah attaining a local maximum), then of a gradual, then a more rapid shrinking, until Jacob feels himself old and feeble at the age of 130 and mourns that the days of his years have been few and evil. Is it likely that such an account was deliberately faked? Curiously enough, the famous psalm 90, in which the modern norm of threescore years and ten is set up, is ascribed by Hebrew tradition to Moses, whose life work—according to the same tradition—only commenced at 80 and whose eye was not dim or natural strength abated at the age of 120. It is common knowledge that historical criticism after

the natural reaction against thought-stifling dogmas of Biblical infallibility feels that the pendulum has swung too far, and is turning back in the direction of traditionalism. Moses, like Lycurgus and Solon in Greece, has been reinstated. Excavation at Ur of the Chaldees has put Abraham on the same footing as the record of the rocks. And before the time of the patriarchs there is a tradition of marriage alliances between 'sons of God' and 'daughters of men' very like the unions of the inhabitants of earth and Olympus in Greek mythology. Is it likely that these tales would be invented? From whose fertile brain came the amazing stories, not only of Greek but of Indian, Norse and the host of other mythologies?

But in addition to the testimony thus supplied by myth and legend there is a large amount of evidence being day by day accumulated by the modern excavator. To take only one example, the diggings around Cnossus in the island of Crete have verified the existence of the famous labyrinth. In that marvellous civilisation about 3000 B.C. the ruler possessed a three-storey mansion which a modern millionaire might envy. His system of water supply would satisfy the requirements of the most exacting sanitary engineer. After the pipes had been laid bare a great rain storm came on and the system worked to perfection, causing no little surprise to the excavators. Which of our modern engineers would guarantee the perfect working of his drainage system after a lapse of 5,000 years? The only inference to be drawn is that in pre-

historic times mankind attained heights hitherto undreamt of by our self-satisfied moderns, even in such arts as plumbing, which we have regarded as uniquely characteristic of the last fifty years.

But it may be safely asserted that such arts are rendered necessary by the physical deterioration which has accompanied the decline of our race, and therefore must not be regarded as the most inspired efforts of pristine genius. Our heritage from the great past is the universe of nature itself unspoiled and undefiled, together with the method of communicating ideas we call language, although doubtless the earliest way of communication was telepathic and the very use of fixed symbols was an indication of decadence.

Had the evolutionary process been monotone, that is to say continuously ascending, we should expect this tendency to be reflected in language. As we go further and further into the past we should look for speech which was simpler and simpler—more limited in vocabulary, and possessing a more meagre grammatical apparatus. Now what do we find? Almost exactly the reverse. Every schoolboy knows that it is harder to write Latin than English. The genders, the inflexions, regular and irregular, demand an accuracy of scholarship beyond that which is necessary to master a modern tongue. Greek is still worse, especially when we take account of the considerable difference between dialects. But when we come to Sanskrit, the parent language of the group, the number of cases, declensions, conjugations involves

a bewildering complexity of inflexional terminations. It has been said quite truly that it is doubtful whether even a gifted modern linguist after a lifetime of study could speak classical Sanskrit with moderate fluency and fair correctness. And when we go further back to Vedic Sanskrit the difficulties are many times multiplied. And even Vedic appears to be a simplified version of an earlier and yet richer and more elaborate language. It seems a fair inference that a people capable of using such a medium must have reached a phase of intellectual development higher than ours. This problem has, I think, never been fairly faced by philologists. It has, of course, been suggested that the highly inflected language was the property of a select few, an educated caste, and that the common people spoke a simplified and vulgarised tongue like the Latin used by the Roman proletariat. But that suggestion does not meet the difficulty. In spite of our vaunted education of the people our populace still abuse their relatively simple tongue. They would not have been able to handle any variety, however vulgarised, of the ancient inflected languages.

It cannot be denied that in throwing away inflections we have lost something valuable. It is almost as if we were to neglect pitch in music, retaining only loudness and rhythm, like the jazz pianist playing on the top of the piano and ignoring the keys. In historic times language has not evolved. It has lost organisation through a definite process of denudation. Were this not so it would have

been absurd to retain Latin in the school and university curriculum, as has been so generally done in spite of violent iconoclasts. It might be of interest to inquire what was the origin of the elaborate accidence of early tongues. Did it grow up gradually by a slow process of evolution? The present data are insufficient to warrant a decision. I should not be surprised if the whole structure was the work of literary despots of the past who appointed commissions to standardise and regulate forms of speech as we now draft traffic regulations or ordain decimalised systems of weights and measures. These regulations were then put into force and their breaking punished by suitable penalties, a procedure which fourth form masters in our own day have not disdained to copy.

Whatever the cause, there can be no question that the same disintegration is seen in all languages which we possess in a more or less uncorrupted form. The older Irish language is much more variegated than its modern derivative. The multitude of silent and apparently redundant letters were in the ancient speech neither silent nor redundant. Even in the language of a decadent and disappearing race such as the aborigines of Australia there are curious traces of a rich heritage in the presence of 14,000 verbs. These represented shades of meaning to which we have grown insensible. The usual explanation that we now represent the same ideas by a smaller number of words more judiciously selected does not altogether remove the difficulty.

The fact remains that none of us moderns could have acquired or used such a giant vocabulary.

Again, it was before the dawn of history that the raw material of our present vocabularies was formed. How many words do we use now whose roots do not lie in the far distant past? Whole systems have been entirely lost, others we have partly preserved, losing subtleties of pitch, stress and inflection, and mingling without much artistry different stocks. The formation of language gives evidence of an early period of astonishing intellectual fertility. Further, the very fixation of language implies a decadence. For we get a limited number of vowels instead of a continuous and infinite number of possible relations of the tongue to the hard palate. Recent analysis of the vowel sounds into differences of pitch between notes produced in the anterior and posterior cavities of the mouth shows what a wealth of sounds has been lost. The change is like that from the infinite flexibility of the violin to the fixed notes and incorrect intervals of the pianoforte. Originally all speech was music, as all literature was poetry. The Greek use of the term 'music,' based on the fusion of tone and language in the art of the Homeric minstrel, illustrates this. Human intercourse was grand opera with unlimited freedom of tone and gesture. The teaching and practice of vocal elocution and bodily eurhythmics are pedagogical attempts to restore this early natural rhythm and cadence. The fact also that different local dialects preserve important vocalic differences show

that at one time a greater wealth of vowels was employed. In all these ways language is demonstrated to be the poor and imperfect survival of something which in earlier days was relatively rich and perfect.

To return to the theme of folklore, I have tried to show that our fairy tales, myths, and even religious imagery are not really works of imagination in the vulgar sense at all, but revived percepts due to racial memory. What shall we say of heaven and hell? Modern liberal theologians have made commonplace the idea that both are states of mind, not places at all. The superficial scientist makes merry with the idea that heaven is above us, pointing out that to the Australian and the Englishman heaven would be in almost opposite directions. I have heard a distinguished psychologist maintain that the peculiar cosmic feeling or sensation we get when lying on our backs staring up into the sky accounts for the fact that heaven was placed above us. There is, of course, a disposition to pooh-pooh a crudely material hell. But the descriptions of hell given by Christian fathers, medieval poets and painters, and evangelical orators in the golden age of preaching were very decidedly material. And the most rationalistic of us cannot get away from the fact that brimstone has an unpleasant savour of reality. It seems to me that the simple explanation is that heaven and hell were accurate geographical terms referring to well defined regions in the primeval state of our

globe. The earth's surface at a certain stage was pitted with craters filled with molten metal between pieces of solidifying crust forming the lithosphere. The atmosphere was heaven. It was peopled with beings whose bodies were gaseous rather than liquid or solid. In the high temperature then prevailing our own bodies could not have existed as solid structures. "Who maketh his angels spirits and his ministers a flame of fire" is literal and accurate.

The description of angels as spirits and the various subtler kinds of matter—astral, etheric, etc.—occurring in most oriental cosmogonies cannot otherwise be explained. Such gaseous beings would, of course, be real but transparent and almost invisible. As a boy I remember the saddest result of a precocious scepticism was my loss of belief in angels. And one writer of high distinction told me once with apparent sincerity—at all events with tears in his eyes—that he had seen fairies. A very curious and possibly relevant fact is the widespread occurrence of dreams of flying. Some observers assert that they are almost universal. I have had such dreams frequently. At first I was inclined to attribute them to racial memories of a time when we were birds (as suggested by embryonic development). But in these dreams there is no mechanical propulsion, no winging in our flight. Our bodies float about, light as air, just as in the modern sport of balloon jumping. I believe that in dreams of this nature we penetrate to very

deeply buried memories of a time when we were indeed a race of spirits.

Even a theoretically slight and simple mechanical adjustment would make us angels once again. The effect of the 'centrifugal force' due to the earth's rotation takes off at present about one two hundred and eighty-ninth part of our weight at the equator. This effect falls, of course, to zero as we move toward either pole, because we are getting nearer to the axis of rotation. If we could spin ourselves seventeen times faster this force, which varies as the square of the angular speed, would be 289 times greater and would relieve us of all our weight. We should move hither and thither at will in a so-called 'null' gravitation field, the earth's pull being completely neutralised. Instead of needing aeroplanes to fly from continent to continent we should effortlessly put a girdle round about the earth in the manner of Shakspere's Puck. Our babies would no longer crawl on floor or gutter but float as infant cherubs without even the need of wings. No doubt these artistic portrayals are representations of actual facts. For the odds are overwhelmingly in favour of this condition having been even fortuitously realised at some point in the history of our planet. And the remark of a zoological friend of mine, "If there were angels, where are their fossil remains?" is not strictly relevant.

It is curious that Milton in "Paradise Lost" makes Raphael depict such a possible future for humanity:

"Your bodies may at last turn all to spirit,
Improved by tract of time, and wing'd ascend
Ethereal, as we, or may at choice
Here or in heavenly paradises dwell."

In all early literature, Homer for example, heavenly messengers come to visit mankind. In other ancient word-pictures there are nymphs dancing in the glades, dryads and elves among the trees, mischievous and malignant as well as good spirits—there is a complete hierarchy of these spiritual beings. Did not such creatures at one time exist, by what fertile imagination would they have been conceived? Could mankind, slowly and painfully emerging from brute savagery, have evolved such sublime, such delicate, such airy fancies? Let us remember that "Paradise Lost" is probably the greatest poem ever written, the greatest artistic achievement of our fallen race. Every work of art must be based on truth—on fidelity to nature. If the Miltonic cosmogony is untrue, the whole construction is based on a lie. But if we assume the past existence of spirit beings—not immaterial, of course, but formed of gaseous rather than liquid and solid matter—we abolish at once the intolerable divorce between poetry and science. Is it not time that these apparent opposites were definitely and finally reconciled? I return to the old question, Can anything have value which has not also truth? Is not truth itself the ultimate value and the ultimate ground of values? Poetry by common consent has value, it must therefore have truth. But

this truth is not merely congruence and consistence of imagined unrealities but fidelity to a real supernatural order which once existed and has been more or less faithfully preserved in the records of different peoples. If there were not a common underlying reality how could these legends exhibit such a striking similarity? The same gods, the same orders of daemonic beings, appear quite recognisably under different names. The accounts are often more conspicuously in agreement than two descriptions of the same historic country given by different travellers. Of myth every conceivable explanation has been offered except the obvious one that it is true. So we spend our lives in missing the obvious.

From the purely physical point of view solid and liquid matter are possibly simply degenerate forms of gaseous matter. So matter is a degenerate form of electricity, electricity of the Eternal Spirit Who once brooded over the face of nothingness. Our world problem will never be completely solved until we are dissolved or sublimated—translated like Enoch or Shakspere's Bottom. Jewish tradition informs us that man was formed of the dust of the ground. But in early times there was no dust upon the earth any more than there is upon the surface of our sun at present. The Olympic beings were formed out of chemical elements existing at high temperatures. Because our bodies could not stand such temperatures it does not follow that there were not other bodies that could. It is a common error of the superficial scientist to limit

the possibility of life to the conditions under which he is at present accustomed to live. Heat means simply rapidity of molecular motion. There is a negative limit, the absolute zero, when all such motion ceases, whereas there is no upper or positive limit—a thought which should terrify the orthodox when they think eschatologically. At higher temperatures life would naturally be more intense. A few years ago current slang denoted superlative intensity by the epithet 'red-hot.' Further, such spirit beings would differ from us in their mutability. They would possess a rapid power of sex-reversal unknown to our biologists. "For spirits when they please can either sex assume or both." And so the ancient gods and goddesses masqueraded in the most puzzling disguises. There is still in most of us a wish to be other than ourselves, which we can indulge only to an infinitesimal degree, through cosmetics, false beards, women wearing men's clothes—all of which possess a curious fascination for us.

We may perhaps see in miracles the occasional survival of a more elastic course of nature, in which more wonderful things did happen. If we assume that miracles do occur we must regard them as essentially sporadic and unrepeatable at will. They depend upon what theologians call the direct intervention of God, require the medium of a remarkable personality, and follow no yet ascertained law. Whereas a modern scientific 'miracle,' though needing an effort of genius for its discovery, can be enshrined in a describable process or for-

mula and thus be repeated at any time by an ordinarily competent scientific worker who is in possession of that formula. Each such discovery is a definite step in advance, a front trench permanently wrested from ignorance, an heirloom of the race. It is no wonder, therefore, that miracles form no part of the modern scientific world-view.

At the same time all of us, whether scientifically trained or not, have an appetite for the marvellous which is entirely unappeased by such wonders as have been performed by speed merchants on land or water or in the air. This desire manifests itself in music-hall performances, spiritualistic séances, or around the midnight fire when weird tales are exchanged. It is not a morbid or degenerate craving, but a characteristic of healthy boyhood or manhood. We all love remarkable tales of animal intelligence. And we may say that if man has fallen so have animals. A great deal of primitive religion is totem worship. The totem is an animal, in some cases even a plant. Animals and plants play an integral part in the most beautiful myths of antiquity. The only conceivable explanation is that at one time they possessed intelligence of a high order. Bees show occasional gleams of very high mental acuteness. In their hexagonal cell they have solved correctly a problem in the differential calculus. In fact the whole of plant and animal life is marked by the relics of intelligence of the very highest type. That intelligence is now petrified, gone blind. In its present condition the bee is not going to solve a second mathematical problem.

There is, moreover, a strange universality in the legends which attribute speech to animals. Australian folk-lore contains little else than such tales. Hebrew religious literature contains one remarkable example where "the dumb ass speaking with man's voice forbad the madness of the prophet." Did animals ever talk? A physiological examination of their speech centres and vocal organs would suggest and almost dictate an affirmative answer. There is no reason to suppose that the parrot has any special features of brain, mouth, or larynx which enable it to give such a faithful reproduction of the human voice. The vocal efforts of other birds and beasts are more limited and stereotyped (except in the case of song birds). But this deficiency is, perhaps, simply due to lack of training. A human infant who did not hear articulate speech would be arrested at nearly the same stage of development. The wolf-children of India and the famous savage of Aveyron were similarly inarticulate. So, when we hear the ordinary folk-tales of animals speaking rationally, we should reflect that this is by no means inherently impossible, but that beasts, like ourselves, were different in the Golden Age. Rudyard Kipling's tales and the history of Tarzan of the Apes are fascinating because they have been true. In children's newspapers and pages for juveniles in ordinary journals the most common form of entertainment consists in picture stories dealing with the adventures of animal characters who speak and behave as human beings. Film fans are well acquainted with the

exploits of such typical animals. We can only conclude that the powerful psychological appeal of these representations depends on our racial memory of a time when all this was a reality. It is very curious that in Hebrew prophecy the first Isaiah visualised a return of this age in which even brutes were to lose their instinctive ferocity. In his golden dream the wolf was to dwell with the lamb, the lion eat straw like the ox, and the hole of the asp become the playground of the sucking child. "They shall not hurt nor destroy in all my holy mountain: for the earth shall be full of the knowledge of the Lord, as the waters cover the sea." Not alone in human but in irrational and savage breast shall again sound the voice of the Eternal. As it was in the beginning so it again and for ever shall be. The Golden Age belongs both to the past and to the future.

CHAPTER VI.

Religion.

The attitude of scientific thought towards religion has been for the most part negative and destructive or else merely historical and descriptive. There has been little attempt at critical appraisement. Now religion essentially depends upon individual experience. But this is the experience of the greatest minds. The average man's experience has contributed as little to religion as to science. According to questionnaires perhaps 20% of human beings have enjoyed supranormal experiences which might be classified as religious. But in more than 99% of these cases the experience is trivial except for the individual himself. He has been there and he knows, but he cannot convert others to his point of view. And it would not be good that he should, for he has no essentially new truth to communicate. Mankind lives on the world-views which have been secured by certain gifted individuals during brief inspired periods of their lives. This was recognised in Hebrew prophecy. Only the gifted and trained few were prophets and the 'word of the Lord' came even to them only occasionally. Women as well as men have been channels of the divine inspiration. It is noteworthy that the three most

considerable modern religious movements, theosophy, spiritualism and Christian Science, owe their fundamental ideas as well as practical inception rather to women than to men. It is clear that no one would start a new religion in cold blood. Only under the impulse of an intense mental experience would an individual have the assurance leading him to assume the prophetic rôle and to initiate such a considerable departure from conventional beliefs with their hallowed associations. Some persons wake up just once in their lives. The process has been appropriately described in the classical passage of the fourth Gospel as being 'born again.' It is perhaps primarily physical rather than mental. It may come with the favourable turning point of a serious illness or after a long period of lassitude and depression. In many religious biographies it has been described as the daybreak following the dark night of the soul. The religious temperament is notoriously liable to ups and downs, it has its moments of ecstasy and of desolation. The crisis came to Jesus at about thirty years of age, to Mahomet at forty, to Mary Baker Eddy at forty-five. These persons had pondered for years over certain problems. Then in the perfect mental functioning accompanying intense bodily health the ecstatic experience arrived that all these problems were solved. Henceforward the seer is an enthusiastic propagandist. Common tasks no longer attract him. He becomes rather a trial to his relatives, friends and neighbours who cannot realise what has happened to him. "Is not

this the son of Joseph, and are not his brethren with us?" and "Whence hath this man these things?" were the astonished and almost aggrieved queries regarding Jesus. Something very wonderful clearly did happen, described by orthodox Christian theologians as the clear manifestation of the congenital fusion of two natures, human and divine, in a single person, and by theosophy as a more sudden descent of a higher power into a prepared body, producing another great 'adept.' The question still remains—Are the intuitions which come to such minds in their most inspired moments worthy of credence or not? Are they true or only sublime self-deception? The importance of such a question cannot be exaggerated. Some thinkers categorise these states of mind as definitely pathological, like the delusional insanity and ego-mania which precede the final break-up in general paralysis of the insane. Intense mental activity sometimes affects the brain as intense study the eyes. Yet we do not challenge a scholar's conclusions on the ground that he is myopic. Of course in an excited mental state there are often pathological bodily symptoms. But these do not affect the validity of the mental processes themselves. It would not, for instance, invalidate the truth of Newton's theory of universal gravitation if it were proved that at the time when he made the discovery his temperature stood at 103 degrees Fahrenheit. This generalisation must be judged on its own merits—on its capacity to explain ascertained facts, on its consistency with other approved

theories, on its susceptibility of more accurate modification in the hands of Fitzgerald and Lorentz and of Einstein and Weyl.

And so these brief moments of penetrating insight into ultimate religious problems are to be regarded as our race's choicest possessions. They are justifiably styled 'revelations,' and come originally from the Source of all thought, though according to the present theory they probably exist in the unconscious mind of every one of us, and are partial echoes of an earlier and more complete 'revelation.'

But when the prophet's deep intuitions are stereotyped by seers of narrower vision, or imperfectly rationalised by hair-splitting logicians, or edited by calculating priests for popular consumption, the results in the form of theological dogma are much less inspiring.

What is the present state of affairs in regard to Christian theology? Let us take typical doctrines—the divinity, virgin birth, resurrection and ascension of the founder of Christianity. Without wishing to dismiss these as frauds upon humanity, the invention of sagacious priests who wished to establish their own privileged position in society, we cannot but admit that Christians are either uncritical (the laity) or not entirely disinterested (the priesthood). The majority of unsophisticated believers are entirely unintelligent. Further, they do not wish to comprehend the dogmas they assert. Their watchwords of orthodoxy are simply shibboleths. Religion tends to degenerate into an unpleasant

manifestation of the herd instinct. The violent Orangeman has cheerfully said, "To hell with the Pope," without any clear ideas regarding the Bishop of Rome or the future state of punishment. To me it seems that most dogmas which the present more intelligent generation cannot accept have been laid down one by one in response to some crisis in the church and with only slight regard to historical accuracy. Their authors were shrewd churchmen, intelligent opportunists, gifted with psychological insight rather than a passion for pure truth.

Take the first doctrine, that of the divinity of Christ. The question as to whether he was 'divine' has been disputed with much heat. But the term 'divine' has not in the discussion been adequately defined. Does it mean that Jesus was physically perfect? Apparently not. Had he the Apollo-like perfection of Greek divinity such a fact would undoubtedly have been noted. He was subject to weariness and the ordinary physical weaknesses of men. Was he intellectually perfect? Were *all* treasures of wisdom and knowledge hid in him? Apparently not. When he was asked the common puzzle as to the date of the 'end of the world' he replied simply that this was known not to the Son but to the Father. Could some of the scientific men of his time have asked him with regard to, say, modern wave mechanics, he could only have returned the same answer.

What, then, does the term 'divine' mean? That he was morally perfect? This has been much more

satisfactorily maintained. But there is just one important matter in which an unbiassed reader of the gospels must allow him to have fallen a little short of his own high standard. It was his attitude to the official priesthood. Sweeping denunciations of an entire class of individuals are rarely if ever justified. Despite the mellowing lapse of time such phrases as 'guilty of the blood of the prophets,' 'generation of vipers,' 'graves which appear not,' 'whited sepulchres full of dead men's bones and of all uncleanness,' seem unnecessarily harsh. If an anti-clerical reformer of our own day were to indulge in a similar criticism of the heads of any existing church, would he be readily forgiven? Must we not in all seriousness ask whether Jesus extended to Scribe and Pharisee the same charity which he required from his disciples even towards the seven times offending brother? The Jewish priests had kept alive the pure worship of Jehovah in an idolatrous world. They were the guardians of the sacred book and of the national hopes. They were faithful to their trust. They had their faults, but so no doubt had the common people. Why is it that in one case only the faults are underlined? Must we not here acknowledge a solitary flaw marring a mentality which in all other respects featured only the good?

If, then, 'divine' means neither physically, intellectually or morally perfect, it is hard to see how the word can bear any connotation whatever. Like many other famous controversies the dispute between Arian and Athanasian concerned words

only. An accurate definition of the terms involved would have spoiled a good fight. In practice, however, the epithet 'divine' is equivalent to 'unique,' marking out Jesus from all other men, and implying that never again can an equally great personality appear. Used in this sense it affirms a mischievous pessimism. I would suggest that quite the reverse is true. Ere the human race returns to perfection many much greater must appear whose glory shall outshine his as his did that of earlier prophets. And it crudely misconceives the nature of deity, for the Infinite is not exhausted by one or by a series of incarnations. To represent any one person as the ultimate incarnation is to offer a definite insult to Almighty God.

But the actual historical meaning of the term is probably a much humbler one. It merely signified one in whose honour the Roman world performed official religious rites. To ascribe 'divinity' in this sense is, of course, dishonouring to Jesus, because it puts him on the same level as the divine Augustus Caesar or, still worse, the divine Nero Caesar. No doubt the fierce competition between early Christianity and paganism made such deification necessary in the eyes of the Christian leaders of the time. They had to resort to the crude theology of their adversaries in order to provide excuse for a ritual which should prevent adherents of the new religion straying back to the richness of Pagan ceremonial.

Consider next the dogma of the Virgin Birth. Some rationalists explain its psychological origin

very simply by pointing out that in the fourth century of the Christian era the Manichean theory that all evil was connected with matter began to assert its sway. According to this view the Christ *could* not have been born in the ordinary way, which savoured of material impurity. To preserve his own immaculateness he had to be Virgin-born. The stream of the world's purification could not have flowed from a defiled source. Viewed thus the doctrine seems to me to be not merely untrue but an insult to every father, as well as biologically absurd, there being no evidence that the female element in conception is in any way 'purer' than the male. Indeed there is no reason why human passion should not have led to the birth of Jesus, as it obviously did to his death, which, according to evangelical Christian theory, is the central fact in the drama of human redemption. Though by wicked hands crucified and slain, he was delivered by the determinate counsel and foreknowledge of God. As divine providence overruled the life-destroying passion of hate to produce results of world-wide value, might it not more readily have foreknown and overruled the life-preserving passion of love? Surely only a perverse asceticism would refuse to grant this.

The *raison d'être* of the resurrection doctrine is made clear by Paul of Tarsus, who wished for a proof of human immortality and found it in the rising from the tomb of the Christ. But the arguments adduced by that great thinker slightly miss the point. The fact that Jesus rose again after

lying three days in the grave is no guarantee that those whose bodies have been scattered to the winds or blown into unrecognisable fragments by high explosive shall live again. There is physical continuity in one case, there is complete discontinuity in the other. So in St. Paul's other illustration of immortality by the grain of wheat falling into the ground and 'dying' there is still germinal continuity, the dying is only apparent. Believers like myself in personal survival fear that earnest seekers after truth may conclude that their hopes are as insecure as the foundations upon which they have been traditionally made to rest. I personally believe that the resurrection appearances were very vivid memories of one whose personality had for ever impressed itself upon his disciples. That is to say, these posthumous appearances were authentic, but psychical not physical events. Ineffaceable memories of the master had remained with his intimate friends. When memories are peculiarly vivid they become—under slightly pathological conditions—hallucinations, in which by a mental trick these images from the past are considered as existing outside ourselves and as being perceived at the present moment. So these were technically hallucinations, albeit hallucinations of the noblest type. My own mother died in 1915. At times I feel her presence and almost imagine her standing beside me. But I do not, therefore, assert that her grave is empty. To me it seems that the dogma of the empty tomb is a vulgar concession to popular feeling. The obvious query of common sense—

What became of the material particles of the body of Jesus?—has never been answered.

The doctrine elaborated by liberal theologians to avoid this physical difficulty is a kind of halfway-house between the hallucination and strictly orthodox theories. Little attention is paid to the ultimate fate of Christ's physical body—it no doubt shared the common fate of mortal flesh. The resurrection body is a non-physical one. But this is really a return to the spiritualist error of affirming the possibility of discarnate existence, and must therefore be dismissed as untenable. The net conclusion is that the alleged fact does not, and could not, prove immortality, and secondly that it involves a physical impossibility. By intelligent people the resurrection doctrine has been held only as a guarantee of their own survival. When they receive the necessary assurance from another quarter, even that of reincarnation, they hasten to escape from a position which is felt to conflict with common sense to another less obviously vulnerable. It might, perhaps, be added that the doctrine is mischievous because it distracts attention from the only important thing, the permanence of the Christ-spirit in his followers.

The above negative conclusions seem unavoidable. But when all is said something yet remains unexplained. Such flimsy doctrines could never have had the magic potency over the human spirit which the history of the Christian church demonstrates. I have long pondered over an explanation of this, and the only one which seems satisfactory

is that these doctrines represent a past state of perfection when such things actually did occur. There were God-men, first emanations of Deity, theanthropic creatures in whom the eternal Logos was incarnate.

Whence came the idea of virgin birth? Far back in the ages when the world was young there is in my mind no doubt that parthenogenesis was a fairly common, perhaps universal, phenomenon. It survives, of course, in certain species. It is strongly entrenched in all mythologies. When there is so much smoke there must at some time have been fire. Many of the Pagan heroes were virgin-born. In the rivalry between Christianity and paganism it was only likely that Christians should have claimed for their founder the same distinction. Or in the fusion of the two religions it may have been that this was part of the pagan element. Even if Christ *were* virgin-born, we should view it as a sporadic instance of the once usual occurrence. And the reason why the doctrine makes such a powerful appeal to the uncritical mind is that it is the postulated supernatural production of a phenomenon which was once part of the natural world order and therefore of our primitive consciousness.

And as regards the Resurrection we feel that Christ *ought* to have risen even if he didn't. No doubt in the heroic past members of the immortal race lay down in a deathlike swoon and a few days later arose with renewed and glorified bodies. But the power to stay the hand of death, to rise

victorious over the grave, has been ours in the past, will be ours in the future, but has not operated during the past few thousands of years even in the rock-hewn sepulchre in the garden of Joseph of Arimathea.

In conclusion the peculiarly holy or 'numinous' quality (to borrow Otto's famous epithet) possessed by religious experiences is both explained and validated as the survival of a primeval consciousness which is not dim, painful and imperfect, but clear, ineffably joyous and superbly adequate.

But this numinousness is characteristic also of religious ritual. During recent years the Christian sacraments (and religious rites in general) have been intensively studied. The results have been to the devout rather alarming. The Blessed Eucharist or the Lord's Supper, for example, which has to most Christians been fraught with ecstatic dreams of bliss, of longing for complete union with the Saviour and for perfect holiness, is shown to be the immediate lineal descendant of bloody feasts of earlier savagery. It is true that the typical 'reformed' doctrine offers a way of escape by affirming that the 'elements' are merely symbolic, what is conveyed being something purely mental or spiritual. But it may safely be assumed that what is now largely or totally symbolic was once definitely real. Otherwise why have certain specific material elements been selected at all? The only rational explanation seems to be that there was a time when men did actually give their body and their blood to be the meat and drink of other men.

Even cannibal feasts were not merely orgies inspired by the lust of cruelty, but attempts to capture for the eaters the soul and spirit of the eaten. That one man should be sacrificed or should sacrifice himself for the good of others was at one time a course of action possessing obvious value. The old German story of the peculiar virtue residing in the blood that flows from a maiden's veins is preserved for us in Longfellow's "Golden Legend." At present medical science is proceeding in an allied direction towards perfecting the technique of blood transfusion by which the blood donor does actually save the patient's life though, of course, no longer at the cost of his own. It must be admitted that the word 'blood,' found so frequently on the lips of devout Evangelicals of the last generation, had a powerful emotional significance derivable only from a real association in the not so distant past. The animal's blood shed in early ritual was no doubt consumed by priest or votary. The very fact that the Jews were forbidden to use the blood of beasts killed for food indicates the prohibition of an earlier practice.

The practice of circumcision would be considered by modern physicians to possess a real hygienic value much in excess of any possible symbolic and ritual value or value as a badge of racial or tribal superiority. Baptism as a rite involves the sprinkling with real water, and its essential nature is perhaps shown by the insistence on total immersion by advocates of adult baptism. This seems to show that there has been a time in our racial history

when simple operations like washing with water could produce a regeneration of mind and body much more complete than that effected at present by Jones minor's morning ablutions. Physical postures in worship like kneeling, prostration, turning to the east—now largely insignificant—are patent survivals from a time when the attitude or orientation of the body determined that of the mind. The subject of fasting has been discussed elsewhere. It is impossible to give any adequate explanation of the deep significance of religious ritual except on the hypothesis of this loss of human plasticity, of the power of intelligence over matter, and of the general elasticity of nature, to which frequent reference has already been made.

The same hypothesis has already been invoked to explain the miraculous element which so constantly appears in the religious records of the past. Of course primitive religion and science were not merely not opposed but indistinguishable. The wise men, medicine men, or priestly caste were at once religious and scientific leaders. Some Biblical miracles find a natural explanation in the knowledge of physical science possessed by those by whom they were performed. Elijah's bringing fire from heaven has been traced to the using of petrol or other liquid whose vapour burns readily when mixed with air. Recent excavation has confirmed the story of the falling of the walls of Jericho. This and the laying bare of the bed of the river Jordan were probably due to subsidence of the earth's crust on a small scale like that which in

earlier times on a much larger scale produced the engulfing of the ' cities of the plain ' and the African ' rift ' valleys. Perhaps in the case of Jericho Joshua when lodged in Rahab's house upon the wall had espied its tottering foundation and inferred that the vibrations set up by the army's rhythmical march, followed by the blast of the priests' horns, would consummate the catastrophe. In other cases a psychological explanation is given. Joshua made the sun to stand still by exciting the people to fight so fiercely that much was accomplished in a few moments. This seems preferable to stopping the earth's rotation, than which few things from the point of view of dynamical astronomy would be more difficult. As regards the miracles recorded in the New Testament a psychological explanation is sometimes appropriate. When Jesus fed multitudes in the wilderness with a very defective commissariat department it may be that the excitement caused by his words and the hypnotism of his presence so diminished their natural appetites as to make them satisfied with infinitesimal rations. Miracles were once the main stock-in-trade but have now become the bogey of the Christian apologist. Yet we may doubt if the fame of the teacher of Nazareth would have been so great had he not been a wonder worker as well. We must at any rate credit him with unusual powers of curing disease. Nor need we be surprised at this. Wherever a remarkable personality appears such cures are normally reported. There appear to be specific gifts of healing, just as there are of music

or of mathematics. But it is equally certain that the theory of such healing is not understood even by the healer himself. There cannot yet be an art, still less (unless in the limited field marked out by the psychiatrist) a science, of mental healing, as claimed by the followers of Mrs. Eddy.

Yet our belief in a God Who heals all diseases is clearly reminiscent of a time when Infinite Mind was omnipotent and when right thinking could banish pain, disease and even death. In other words the assertion of Christian Scientists that disease exists solely in the finite mind and that the morbid condition is due to an error in human thought is explicable only on the hypothesis that there was once a time when everything was immediately controlled by an infinite immanent intelligence. This power does occasionally manifest itself still. There are cases of direct healing swift and complete which mock the pedestrian arts of the physician and surgeon. Treatment and even diagnosis become superfluous. The difference is the same as that between the family doctor's elaborately phrased faint comfort, "If you persevere in following my instructions you may expect a slight and progressive alleviation of the more pronounced and distressing symptoms," and the magic word of power, "I will, be thou clean." Miracles of healing do occur, but they are sporadic and unpredictable. They are sudden spontaneous energetic outbursts not unlike those cosmic events producing Novae, new stars which burst into short-lived brilliance and then resume for another billion or so

of years their wonted undistinguished careers. The proximate cause is probably some form of atomic disintegration in the individual's body which generates for a short time a superabundance of energy. Contrariwise when the energy reservoir is abnormally depleted faith healer and physician, inspired charlatan and orthodox practitioner, are alike impotent. Many formulas have been devised to fit the occasion, from "God's will be done" (the most reverent and perhaps the most appropriate) to "The patient failed to respond to treatment."

Mental healing depends upon this now rare but once regular interaction between mind and matter. How, we may ask, can the perfect interaction between Infinite Mind and the material universe, which exists at present only in human consciousness and there very imperfectly, be restored? Apparently in two distinct ways. Consciousness may expand inwards until it conquers again the lapsed mass of the unconscious. This would be the completion of psychology, and is supposed to be the task of religion—or at all events of mysticism —to reproduce, make permanent and normal those fleeting states during which the mind is master in its own house. Or again consciousness may expand outwards and grasp the world by external contact. This is the task of science. By some the duty of religion is conceived as a humble one—that of keeping men happy by pious though unverified guesses at truth until the real truth is discovered. A motor-boat has broken down. The

conductor's duty is to prevent the passengers jumping into the sea by assuring them that the fault will be made right or even that it *has* been made right. Meanwhile the mechanic is trying to find the fault and make it right. But if the mechanic does not succeed the conductor's pious fraud is exposed. The mechanic is the man of science. Unless he discovers what is wrong with the world and how it may be set right the prophet will be discovered to have been an impostor. At present there is not enough verified truth to make us happy. And faith bids us act as if certain things were sure to happen because this action of ours may be the only way of ensuring that they shall happen. Thus religion's work is made purely psychological. But sometimes it is easier to deal with things than with men, and so the psychological part becomes the harder one of the two. It was more difficult, for example, for Columbus to keep his sailors contented than to discover America, which could be found simply by sailing west. Now some religious organisations have so interpreted truth as that which is most useful for the majority of mankind to believe. There might even be one creed for the unlearned and another for the learned. This raises the question popularised some years ago under the name of pragmatism, whether the ultimate test of truth may be its helpfulness, whether a sufficiently pious fraud is indistinguishable from truth. My attitude is simply this. I consider that, if a belief is helpful, this is not a proof but an indication that the belief is either true or included in some wider

truth. So the assurances of religion are either exact and complete or part of a wider and more comfortable assurance which will hereafter be vouched for by the science of the future. The latter alternative is clearly the only admissible one.

With respect to the difference between the creed of the thinking man and that of his less acute and critical brother, it is legitimate for the latter to regard his own religion as the true one in the sense that it is truest for him. He has been reared in it. It is bound up with childhood's potent associations. It is his natural way of approach to the Holy of Holies. From the point of view of absolute truth he is no doubt in error, like the man who believes his own wife the best in the world. Yet the latter illusion, if generally prevalent, would obviate much unhappiness. But conversely it seldom happens that any form of religious belief is best for one who has not been educated in that faith. So proselytism is rarely justified.

It is nowadays, however, almost impossible for any intelligent person to maintain this naïve and credulous simplicity. He is forced to abandon his cherished system of beliefs and adopt a more sophisticated attitude. Intellectually, of course, his gain is great. He is like the modern mathematical student gaining a liberal education through a critical study of Euclid's 'Elements,' instead of, like his rule of thumb predecessor, labouring in an intellectual treadmill. Yet he is puzzled by the very vastness and richness of the field. The chaotically varied manifestations of the religious instinct leave

him baffled. The one consideration which has helped somewhat to straighten out this tangle in my own mind, and which I present as the central and fundamental thesis of this book, is that of the originally perfect intercommunion between infinite and finite mind towards which all religious aspirations turn and which all religious rules and rituals endeavour, however vainly, to recover.

Further, on the practical side our thinker must receive from some quarter or other the assurance necessary to support him in leading a strenuous and usefully integrated life among the futilities and the difficulties which for the most part constitute our sentient existence—unless, of course, he is one of those who play the game without analysable theory, conscious motive or thought of ultimate reward. As a minimum I would postulate the hope of our race's re-achieving more than its original communion with God, and of our being there consciously to share in the achievement. With the legitimacy of this hope I shall deal in the section on immortality. In practice it may be better to have a working creed, however dogmatic and imperfect, rather than to attain theoretical consistence at the cost of practical efficiency. There have been in the past men of devoted lives whose creed was crude and narrow and who were fain, like John Bunyan's pilgrim, to run forward stopping their ears with their fingers so as to gain entrance to the only path they could discern leading to the Celestial City.

Here I must introduce a slight personal note. I

am only too acutely conscious that many things I have just said will cause pain to dearly loved and life-long friends. I have, however, sacrificed certain sections which might be particularly offensive to earnest Christian persons. I realise that even in these days of free speech there are limits which may not be overstepped, and that even a college don should not speak all his mind. I had thought seriously of omitting this whole chapter. I am deterred from so doing by memories of conversations I have had during the past ten years with students, among whom dissatisfaction with existing creeds seemed almost universal. By a startling paradox the more acute the mind the more complete appeared to be the chaos in or indifference toward religious tenets. Remembering, too, the agony I myself endured during student days when increasing knowledge tore from me one by one each cherished belief, without putting anything solid and comfortable in its place, I feel it almost a sacred duty to make an effort to spare others a similar experience.

But it may be objected: "Would not such a reinterpretation of religion as you propose undermine organised Christianity?" Far from it. The sweeping away of theological cobwebs would be of incalculable service not only to mankind in general, but to the Churches themselves. Freed from this incubus of dogma the Christian Church would go more readily to her task of holding up before mankind her wonderful example of a God-filled life, and thus bringing man nearer to God. Week by week articles appear in the public press, like one I have

just read by H. W. Austin, the famous lawn tennis player, describing existing dogma as outworn and impossible. This seems to be the view of the intelligent layman of to-day. The world has been in the past much benefited by religious revivals. But being linked to impossible creeds these have made progress only among relatively simple and uncritical persons—Welsh miners, or fishermen of the Moray Firth, or ' down-and-outs ' of the city slums. Education has now reached all classes. It follows, therefore, that in the next revival religious experience must not be unequally yoked with dogma. Indeed the latest religious stirring, the Oxford Group movement, makes its successful appeal to educated people, to ' up-and-outs,' only by definitely discarding dogma. This movement furnishes abundant evidence that all the psychic phenomena usually classified as religious may be produced, or may spontaneously arise, without any credal or ritual basis whatever. This is only natural. We cannot expect to confine within our neatly constructed suction tubes of ritual and dogma the wind which bloweth where it listeth.

Yet ritual will continue for its emotional and aesthetic value, and as inducing that peculiar sense of awe and holiness which has been already noticed as being essential to religion. But the tawdriness and hypocrisy of sacerdotalism will vanish, and the parson become more truly than ever a man among men, morally unassuming and intellectually honest. The bitter farce of an Anglican or Non-conformist clergyman uttering weekly from the

pulpit doctrines which he no longer believes for fear of losing his living will for ever cease.

It may be alleged that my system involves a reversal of our orthodox beliefs regarding man, sin and salvation. But Darwinism already cuts out sin and the Fall. No Fall, no atonement; no degeneration, no regeneration; no sin, no Saviour. Take the Fall out of the Thirty-Nine Articles and how much, except secular matter, remains? The whole foundation is gone. Again how many people now-a-days think of the world in terms of sin and salvation? There is a curious sense of unreality about even the most ordinary theological nomenclature.

Finally, it may be said that my theory cuts across all orthodoxy—that of science as well as that of religion. There are, however, at present at least five distinct orthodoxies. There is (1) the orthodoxy of biological science (Darwinism), which is only 60 years old, has been considerably altered recently, and is, I maintain, ripe for a complete transformation. There is (2) the orthodoxy of dogmatic Christianity, which has received many rude shocks in recent years, and seems to have lost its grip on thinking men and women. There is (3) the orthodoxy of the science of comparative religion which is a sane and unobjectionable form of theism. There is (4) the orthodoxy of physical science which has since the beginning of the present century switched from materialism to idealism. There is (5) the orthodoxy of philosophy which has throughout the ages been idealism though subject from time to time to challenge from heterodox systems of realism.

I believe that (3), (4) and (5) are mutually compatible and true. I have tried to weld them into a single system. I believe that (1) and (2) are mutually incompatible as well as incompatible with (3), (4), (5) and must, therefore, be modified. That is my position in a nutshell. If I had to choose between orthodoxies I should prefer that of philosophy as being the fundamental or general science. But I should not rest satisfied until the orthodoxy of each special science coincided with that of the general world-view. Some further characteristics of the world-view of philosophy I shall now proceed to consider.

CHAPTER VII.

PHILOSOPHY.

(a) *God.*

The traditional task of metaphysics is to attain satisfactory concepts of God, freedom and immortality. It will be the object of this and the two succeeding sections of the present chapter to show how the doctrine of a Fall is necessary to clear up our notions regarding all three.

Regarding Deity, in spite of the labours of theologians much unnecessary obscurity still prevails. Whereas the true definition of God is extraordinarily simple. He is just the sum total of all intelligence. He is not to be confused with the Universe for two reasons. Firstly, the principle behind the machine is not the same as the machine. Secondly, only a limited amount of intelligence has already gone into the construction of the universe of existing things. An unlimited store still remains adequate to the forming of new universes or the further elaboration of the existent one. As thus defined He obviously is. If we say He does not exist, it is because we find it convenient to limit the attribution of 'existence' to that which has a definite space-time location. All so-called 'abstract'

essences *are*, but do not exist. Take as a simple example the number 2. It simply is by virtue of its nature. It receives concrete reference wherever there are two pennies, two lovers, two Houses of Parliament. Or take the ratio 3 to 2 (or 150 to 100). Whenever we see two things one of which is 50% greater than the other we have a temporary localisation in space and time of this concept. But the concept itself is not local or temporal; it dwells in the world of ideas which is unseen and eternal. The common mistake of theologians is to identify God, Who is simply the whole of these eternal ideas, with something peculiarly awesome and mysterious, or else with some human emotion. Christianity is not always free from blame in this respect. "God is intelligence" is a sound scientific statement. "God is love" is an epigram, noble no doubt, but in some respects mischievous and misleading. How, for instance, can God be love and at the same time without body, parts or passions? For love is a passion in the technical Greek sense. Other religions like Judaism and Mohammedanism approximate more closely to a philosophic theism. Theosophy has got hold of the central idea when it asserts that no religion is higher than truth. Christian Science as a metaphysic is formally correct, though it fails to see that mind may manifest itself in medical and surgical discoveries. Still it is a remarkable example of a wholly metaphysical system, which, in spite of obvious errors and deficiencies, has been of advantage to thousands of sufferers. This fact should at all events dispel all

misconceptions as to the uselessness of metaphysics.

Freemasonry is perhaps the only existing cult which keeps alive the ancient and true concept of God, and this probably explains its very considerable influence over the educated and sceptical world of to-day.

The idea of a transcendent creator is, however, a greater stumbling block. In actual fact there is nothing inherently impossible in the existence of an architect of superhuman size and ability living in some distant stellar group who has designed the solar system (including the earth and its inhabitants) for an afternoon's diversion, and, like the boy who has built a sand castle, forgotten all about it till the next morning (an interval represented perhaps by a few billions of our years). But it is not a probable supposition, and in any case it does not solve the problem, for we would then have to account for the architect.

And so modern theologians, in deference to current trends of thought, are willing to replace a transcendent by an immanent deity. In fact, this is just the solitary gain made by modern theology, while its losses have been so marked as to destroy beyond hope of repair its former systematic character. And, indeed, when we conceive deity in the sole consistent way as infinite mind or intelligence we see that only this creation from within is possible. If there were an architect, however powerful, he would be finite and material. He would merely play the part of the demiurgus in the

Platonic system or that assigned to Jesus Christ by the author of the Epistle to the Hebrews.

Some persons, it is true, deny God altogether. But on closer analysis they are found to deny God only as defined by certain other persons—a very different matter. I do not see how anyone could conceivably deny God as defined above, in a manner which is, of course, in no respect original but simply that of Plato, Hegel and philosophic orthodoxy generally, otherwise known as idealism. To look on the world and see no God is just intellectual blindness like that of a man who at a race meeting would deny the reality of the odds offered on the horses or greyhounds because he cannot behold these odds in a material form. To our genial friend the bookmaker, or to the backer with a taste for arithmetic and finance rather than horseflesh, they are the most outstanding reality. A small boy permitted to watch his mother playing bridge said, "Mummy, I see the clubs and spades and hearts and diamonds, but where are the no-trumps?" Yet the bridge player knows that no-trumps as a declaration has a definite though immaterial reality.

There are, in fact, three worlds. The first is that of infinite mind, of ideas or concepts, like the number 17, which simply 'are' but do not 'exist.' The second is the world of finite mind, when I think of the number 17. The third is the world of matter—17 buttons or bananas. The connexion between the first and third—universal, as I believe, during the Golden Age—is now made solely in the

human brain, and there only rarely to such a degree as would suggest the original perfection.

Theoretically, of course, as infinite intelligence God is all powerful. But in practice He is almost powerless. For He is all but excluded from the world He has made. The solemn and awful tragedy symbolised by the Eden myth was not merely Paradise lost to man, but the world lost to God. How many times has the question been asked, "Why did God permit the late European war?" The pathetic truth is that He could not have prevented it. From the alternatives of His not being all mighty or not all good it is obviously preferable to choose the former. Actually it was not God but the absence of God which caused the war. The Deists of the eighteenth century were right in asserting the present divorce between creator and created universe. The astronomer was right who swept the heavens with his telescope and found no God. Omar was right when he wrote

> "And that inverted Bowl they call the Sky . . .
> Lift not your hands to *It* for help—for It
> As impotently moves as you or I."

For in the universe around us, wonderful though it is, no fresh intelligence seems to be operating. The one window in the material world opening on Deity is the mind of man. Man may be said to possess a 'soul' because he can receive new ideas from the infinite storehouse. Occasionally this window is thrown open—to Moses at the burning bush, to the Buddha beneath the bo tree, to Jesus

at Bethabara beyond Jordan, to Mahomet in the stillness of the Arabian desert. From these hours of insight mankind's faith and hope have been reborn. And every scientific discovery is an opening of the same window.

The religious difficulty is not theoretical but practical. It is not one of defining God but of getting in touch with Him. How many aching hearts have echoed the agonised cry of the Hebrew patriarch, "Oh that I knew where I might find Him!"

In truth, the quest of man for God throughout the ages has been supremely pathetic. Devotees drunk with orgy have tried to gate-crash into the kingdom of heaven. Fasting ascetics, eunuchs and virgins have stood mournfully outside the gates of Paradise. In Christianity the austerer method won the day, the 'pale Galilean' conquered, albeit the real Galilean came eating and drinking, the friend of publicans and sinners. Yet God is very nigh to every man. He is closer than breathing, nearer than hands and feet. In Him we live and move and have our being. Wherever intelligence is, there He is. The tennis player intelligently placing a shot is more in contact with the divine than the priest reciting unintelligently a paternoster. In the Hebrew so-called 'wisdom' literature this point is brought out. I suppose King Solomon is one of the few great religious initiates who would have cut much ice in Wall Street. The success achieved by him would not have disgraced a modern financier. Never was there a more mar-

vellous transformation than that from the outcast David, hunted upon the mountains, to his son (somewhat irregularly installed in his place), who in a few years dazzled the world by an intellectual and material brilliance almost incredible. So much could Divine Wisdom achieve through a single individual begotten by his father in the period of repentance succeeding an episode of lust, treachery and murder. What our grandmothers would doubtless have stigmatised as shocking immodesty on the part of Bathsheba led in the Divine providence to what is, perhaps, the most splendid burst of glory recorded in human annals. Nature is infinitely wise and the Almighty is more broad-minded than we imagine.

The advent of the new analytical psychology some years ago was deemed to have dealt a deadly blow at the genuineness of the longing of the human spirit for God, which is the root of all religion. The individual religious yearning normally experienced during adolescence was discounted as being merely the resurrection of an infantile attitude towards father or mother. The very young child had enjoyed a delightfully close physical and mental union with a parent. Following the inevitable rupture of this ideal relationship and consequent loneliness and isolation, the need for a spiritual guide and friend not unnaturally presented itself in an acute form. That was all. There is an irritating finality about this conclusion. The psychologist has demolished the theologian's house of cards. Modern psychology gives a great impression of

thoroughness. It not only demonstrates that you are wrong but shows you exactly why you are wrong and how your perfectly explicable error arose. Apparently there is nothing more to be said. I must confess that my own faith temporarily wavered. For a few days of agony I felt that all was lost. Then the conviction dawned upon me that the theory of a Fall contained a complete solution of the problem. The God-hunger in all of us is a desire to return, not to an infantile relation, but to the perfect state of man when companionship between ourselves and the Divine was not abnormal and momentary but natural and continuous, when—to speak in Hebrew metaphor —God walked with man in the cool of the evening beneath the trees of the garden. Such communion is, of course, intellectual. But it is satisfying to the point of ineffable rapture. We are caught up like Paul of Tarsus to the third heaven. Life ceases to be an effort and becomes an ecstasy.

(b) *Freedom.*

The second metaphysical crux is the question of human freedom. Some thinkers have asserted that there is no such thing, all our actions and our fortunes being inexorably predetermined. It is, however, obvious that for every agent at every moment there is a domain of possibility and another of impossibility separated by a fairly definite line

of demarcation. There are some weights I can lift easily, others which are too heavy for me, and an intermediate weight which I can *just* lift. I can smash this gas-filled bulb, a fly cannot; but the fly, if it chooses, can walk on the ceiling of the room—a privilege denied to me. It is clear that this freedom is simply the power to shape my conduct according to the ideas in my mind, in other words that freedom is determination by something mental. Want of freedom may be the result of external circumstances, of things or persons. If the door is locked and the window barred I am not free to leave the room—it becomes a prisoner's cell to me. If I am covered by a revolver even the position of my hands may be determined by an alien will.

Now the history of scientific progress is largely the record of man's attempts to escape from domination by material things, or rather, as I assert, to regain the mastery over nature which he had in the beginning. 'Magic' satisfies the same need in the savage breast, miracle in the breast of the devout. To the clear Greek mind what we call miracle was simply some remarkable happening calling for wonder and admiration, and if possible an investigation of the precise method by which the result was obtained. The otherwise sane and solid Roman attached perhaps undue weight to prodigies as attesting the reality of those supernatural beings who sporadically interfered with the ordinary sequence of cause and effect. And in the darker ages that followed the issue was further

obscured by representing God as arbitrarily violating the laws of nature in order to attest the unique character of His Son or the authority vested in the apostles and their successors. To the modern, who is building up a world of freedom by discovering and using natural law, such a conception is almost nauseating. His ideal is that of the scientific genius who is inspired to discover a new secret but leaves an explanation or formula thereof which can be used by any succeeding investigator possessing ordinary skill and intelligence. This is a permanent achievement, an enduring stone set in the temple of knowledge, which is the temple of freedom. Whereas the vaunted achievements of the magician or miracle worker are probably frauds on the public, and even if genuine are not repeatable at will, and are therefore no permanent contribution —except by way of inspiration—to the betterment of mankind.

The true freedom is the ability to act according to concepts. The two essentials are, first, the possession of these concepts and, second, the power to carry them into effect. Hence the two obstacles to freedom are ignorance and tyranny. Ignorance is probably the greatest barrier. The ignorant man is for ever in chains. Take a simple example. If I have learnt to play the violin I am at liberty to fiddle or not to fiddle. If I have not acquired the necessary technical skill I have only Hobson's choice and that a negative one. Through the lack of technique the plastic artist is unable to express his ideas in visible and tangible form. Before the

Fall there was a race of creative artists possessing extraordinary skill and knowledge. The knowledge was withheld from the common herd. There arose crafts and guilds whose secrets were jealously guarded. Of these we have numerous examples, such as operative masons. It is only in the last 100 years that with open universities, cheap technical schools and free libraries we are re-achieving educational democracy. It has been demonstrated that the unintelligent citizen without technical training is not pulling his weight in the civic boat, and is economically a loss—a liability and not an asset to the community. No really unskilled labourer is now-a-days worth employing. In the 19th century the imperfect mechanisation of industry demanded its millions of drudges tied Ixion-like to its wheels. In the 20th mechanical work is being done more and more by mechanical means, and humanity is no longer a cog in the machine but an intelligent operator and director. Henceforth there will be no 'hands'—only brains.

Unfortunately in the past it has been the practice of certain privileged classes, taking a short-sighted view of their own interests, to keep the masses in the deepest ignorance. Lawyers have fattened on the common man's ignorance of law, physicians upon his ignorance of the simple rules of health, and priests upon his ignorance of the true nature of sin and his credulity (based on ignorance) regarding possible rewards and punishments in a future world. In the glorious days to come every man will be his own physician, his own lawyer and

his own priest. He will have no mediator in the earthly or heavenly court. The priesthood of the laity will be an established fact, or rather there will be no laity at all. The layman will have vanished, and we shall all be initiate. So it is with the primitive man even to-day. So it will be in the return to perfection. The parasitic professions will have vanished, and only the clarifying thinkers and creative artists will remain. We shall all be mystics dealing direct with the Almighty and eliminating the middleman's profits.

The second limitation of human freedom is caused by the domination of the wills of other more powerful persons. Slaves, children and wives were in the past unfree because they had to submit to their masters, parents and husbands respectively. (In the assertion of Paul of Tarsus "the husband is head of the wife" we discern the voice of the tyrant rather than the saint.) Roman Law is the concisest formulation of this right of one individual over the person of another. And the re-vindication of the liberty of the submerged personality has stained the earth's face red with blood. Christianity at its inception proclaimed the liberty of man and of woman. In theory it has always stood for freedom, but in practice it has often brought chains. And during the last century our modern capitalistic system for the production, control and distribution of wealth has forged the most adequate set of bonds. In this year of grace 1933 we are nearly all theoretically free. But we are subject to an all-pervading economic tyranny which is daily driving

men and women to the brink of criminal self-assertion or cowardly self-destruction. For the struggle for existence has again, in Hobbes' famous phrase, made man a wolf to man.

As regards the liberty of persons, especially of that of women and children, the pendulum is now swinging violently in the direction of liberty, and (in the eyes of conservative thinkers) even towards undesirable licence. The new education, following Montessori's noble lead, has eliminated the old sterile disciplinary methods. It is realised that the prejudices of age were wrong in imposing a strait-jacket upon the free-thinking mind of youth. Even the need of purely physical freedom is recognised. Once children were called naughty because they wouldn't sit still; now the teacher with deeper physiological knowledge sighs because she no longer wishes to jump joyously about. And the terrible toll of manhood taken on the plains of Flanders and Picardy has allowed woman a freedom they had never perhaps enjoyed since the days of the matriarchs. Woman's complaint is no longer of masculine tyranny, but of masculine neglect. Even the cave-man or sheik type is desiderated. Never was there a time when such an amount of normal feminine hunger for male society went unsatisfied. It is generally known, in spite of (or perhaps on account of) the efforts of literary censors, that this craving is finding a less appropriate outlet. Yet it is no doubt better to dine somewhat unsatisfactorily than not to dine at all. And, reading the extant verses of Sappho, "few, but all roses," I

cannot but admit the soul-stimulating possibilities of purely feminine friendships.

The revolt against the alliance of priestcraft and capitalism has produced the amazing spectacle of Soviet Russia. Of course Russia simply exchanged one set of tyrants for another. Socialism is in itself no cure. It is quite a possible form of economic organisation. This has been shown by the example of such states as Sparta in the golden noon of Greek splendour, and of such communities as that of the apostles in the radiant dawn of Christianity. But it has not the merits which writers like Marx claim for it. As a theory it is psychologically comprehensible as the natural reaction against a harsh and unintelligent capitalist régime.

But the emancipation from economic fetters has not yet begun. We are still tied to the wheels of big business. The watchword in industry now is rationalisation. This is the one word which emerged from the fierce testing of the world war with its prestige enhanced. To carry it out big brains are required at the top and superior intelligence on the part of everyone down to the lowest operative.

The rationalisation of production and distribution is going rapidly forward. The rationalisation of consumption still lags behind. By this is meant simply the intelligent and economical use of natural and manufactured goods and of personal services.

Unfortunately during the last thirty years the old-fashioned value of thrift has been discouraged.

Production has increased by leaps and bounds. And the distributor's problem has been to arouse new wants on the part of the consumer. This has been effectively done through the growth of advertising. But this latter has grown to a wasteful point. Far too many persons are employed in the business of persuading the public to buy certain advertised products when equally good articles are already on the market. And the new problem—very urgent in the present depression—is that of giving the consumer the wherewithal to buy. This is insoluble by the acutest minds of to-day, whether academic economists or practical business men. America was supposed to have a solution. But nothing really came to light except the perfecting of the system of instalment purchasing, the results of which have in many cases been simply deplorable.

The truth is that the over-production of recent years has had irrational and logically absurd results. From the point of view of big business it was good to buy a dozen golf balls and drive them into the nearest pond. The man of common sense will say, "Why produce them at all?" And he is absolutely right. Waste can never be economy. The two are more opposed than black and white. The wider and narrower meanings of the word 'economy' cannot be unconnected. The obvious solution is to resurrect the notion of thrift in a highly rationalised and intelligent form. The consumer will buy fewer goods, and he will put them to a more lasting use. But on the goods themselves there will be a much

higher profit, and so producer as well as consumer will be satisfied. For example, the man who cares for and preserves his clothes is able to afford to pay a higher price per suit to his tailor. In past years there has been a mad cut-throat competition —manufacturers seeking to expand business at any price and turning out vast quantities of articles with hardly any margin of profit. There has been dumping abroad to capture foreign markets. Whereas the future tendency will be to produce better articles. The gross turnover will be less, but the net profit much greater. Genuine artistry will take a place alongside standardised mass production.

There is, moreover, great force in the traditional contention of the moralist that the desire to make money is the root of all evil. The worship of wealth is, of course, strictly speaking, not materialism at all. For since national and international credit systems have been set up wealth is actually immaterial. In our modern highly organised society it is readily transmutable into a multitude of other things, some of them essentially spiritual. The wealthy man can endow universities or homes for lost cats, can assist struggling playwrights, painters, scholars or philosophers, can promote psychic or cancer research—in short aid any cause which is near to his heart.

What has really happened, however, is the growth of a peculiar psychological disposition called the money complex. Wherever desire in an individual is persistently thwarted a complex is formed. It is quite true, as was said above, that our modern

fetters are essentially economic. We rise at 7.30, catch the 8.30 train, travel by a particular class, lunch at an inferior tea shop, choose cheaper seats in theatre or cinema because our 'means' are limited. When we are asked why we are not extending our activities in certain directions we have a ready-made formula to fall back upon—the lack of money. But we then proceed to infer, quite illogically, that had we unlimited means a wonderful world of freedom would at once open before us. This is obviously not so. There are a few persons even to-day to whom, in the slang phrase, money is no object, but whose freedom is still limited. We are, in fact, making the old logical mistake of inferring the affirmative from the negative statement of a conditional proposition. If I have no piano in my flat it is clear that I cannot play Debussy. But it does not follow conversely that if I possessed the most superb instrument I could play even a simple melody.

It thus appears that the benefits of delivery from our political and economic yoke are somewhat illusory. Yet liberty in the political sense is a soul-stirring word. The sentiment is ineradicable from the human breast. It releases the most powerful springs of action. Uncounted crimes have been committed in its name. The only conceivable explanation of its strong psychological appeal is that in the Golden Age man was free, and that in his prison house he carries the memory of that uncaged spontaneity. He was bound to his fellow man only by ties of reciprocal

understanding and of complete mutual transparency. Every two microcosms were in harmony because in each was mirrored the macrocosm. They were like two planes careering through space in perfect freedom yet preserving undisturbed communication through wireless instead of two slaves grossly manacled together whose minds are leagues apart. They were free of economic bonds. For them the wants, the personal insufficiency, to which money testifies did not exist.

Even now the greatest of all pleasures are independent of the command over goods and the services of others which wealth confers. For the supreme and only true pleasure is the exercise of the divine gift of intelligence. And the rapture of the mystic when the vista of truth unfolds itself before him, of the man of science when he picks up a fresh pebble from the infinite shore of the unknown, of the Christian philanthropist when he gives a cup of cold water in his Master's name, is entirely unconnected with the possession of riches. This was the heritage of us all, the common birthright of humanity, when the golden earth was untarnished by decay.

(c) *Immortality.*

The third famous crux of metaphysics is the question of immortality. If a man die, shall he live again? If I choose a short way out of existence by treading on the accelerator, shall I ever again

be conscious of having done so? This is, perhaps, the toughest problem with which the human intellect has to grapple. The march of exact science has contributed singularly little towards its elucidation. No doubt modern spiritualism is a definite attempt to bring its investigation into the domain of experimental science. But in the present writer's opinion the results are absolutely negative. No proof of the reality of discarnate intelligence is forthcoming. As in many other branches of enquiry, psychical research has increased our knowledge but provided no basis for faith. Apart from certain evidence to be considered presently there are no data on which the man of science can affirm the common faith of mankind. The plain man cannot bite on the problem at all. He thinks a simple question should receive a simple answer. But when he enters the labyrinth constructed by the professional metaphysician he invariably goes out by the same door whence he came in. He then tries to balance the weight of opinion on either side. He is puzzled to find men of the highest eminence giving diametrically opposed answers to the supreme query. Thoroughly baffled, he either accepts the ready-made answer provided by some existing religious faith or cult, or gives up the search as hopeless. The American professor of psychology sends round a questionnaire to his students, tabulates neatly their replies, and deals with the figures by approved statistical methods.

The more sophisticated or less statistically minded investigator adopts the pragmatic mode of

attack. Is it necessary, or at all events helpful, to believe in personal survival? I read somewhere that one ingenious (and ingenuous) experimental psychologist proposed to test this by taking two sets of 100 children, there being nothing to choose initially between the two. The members of one set were to be told that they had immortal souls and the others that they had not. The verdict was to be obtained by ascertaining which set succeeded best at school and in after life. There were not unnatural protests on the part of the parents of the latter children, and the scheme fell through. The loss to pure science was probably, however, not great, as the effect of such instruction upon all but unusually precocious or gifted children would have been quite inappreciable. My view of pragmatism has been already stated. If a belief is helpful this fact is an indication that the belief is true. It is not, however, a proof of the doctrine, nor does it supply the want of a proof. The correct attitude is to hold the belief for the time being as an article of faith, but to spare no effort to construct a proof and thus ultimately provide a thoroughly reasonable assurance of the faith that is in us.

Let us, then, make the attempt. The now antiquated 'materialistic' argument was that the body-mind consists of the arrangement in space of a definite number of atoms of hydrogen, carbon, phosphorus, iron, and so on. Immortality is a figment because this configuration is unstable, and as a matter of fact determines at death. Now such a chemical analysis is, of course, formally correct,

but about as valuable as the analysis of a Shakspere sonnet into its component letters. It is the building up of these letters into words and of these words into metrical and grammatical units to which symbolic values based on a long literary history are attached that make the poem. So it is with the human body or body-mind. The human spirit is just as great a reality as the spirit of the poem, or rather much greater inasmuch as the potter is greater than the pot. But, curiously enough, if we adhere strictly to the materialistic hypothesis, personal survival is not only possible but inevitable. For the super-scientist of the future can obviously build up these atoms into any pattern he pleases or into all possible patterns, and so we shall all live again.

Secondly, there is the current scientific attitude based on orthodox evolutionary theory, which regards the individual as a means of securing the survival of the race.

> "So careful of the type she seems,
> So careless of the single life,"

sang Tennyson in bitterness when the iron of Darwinism had entered his soul. Bergson even speaks of life as a current passing from germ to germ through the medium of the developed organism. In point of fact evolution has occasionally failed in this object, as the extinction of certain species testifies. The creed is unsatisfactory. For it is clear on a little reflection that, if one generation exists for the sake of the next and that for another subsequent generation, there is no final purpose

whatever. The story of evolution is like the tales told by certain gallant colonels of a past generation, interminable and utterly pointless. There is no reason why it should not go on for ever and still less reason why it should ever have begun. Nature, which does nothing in vain, would seem to have done everything in vain, for sooner or later mankind shall be numbered among the extinct species and his whole history might just as well never have occurred. Of course on the theory of a Fall the simple explanation is that at one time consciousness was carried on from generation to generation. The father really lived again in his son. In that case the survival of the race would be perfectly satisfactory from the standpoint of the individual.

The third point of view is that man has a kind of ideal survival through the permanence of his good deeds in the material world and in the remembrance of posterity. We all know the lines of Campbell:

> "But strew his ashes to the wind
> Whose sword or voice has served mankind—
> And is he dead whose glorious mind
> Lifts thine on high?
> To live in hearts we leave behind
> Is not to die."

This attitude is, no doubt, practically valuable. Under its inspiration engineers have built bridges, pioneers have reclaimed desert lands, missionaries founded settlements, and in the Great War men have loved not their lives unto the death, pur-

chasing for themselves a fame that grows not old. Rupert Brooke wrote

> "If I should die think only this of me,
> That there's a corner in some foreign field
> That is for ever England."

Truly the world is the sepulchre of famous men. But, as regards the vast majority of us, our foot-prints on Time's sands are for ever obliterated by the next incoming tide. And it is almost as often true that

> "The evil that men do lives after them,
> The good is oft interred with their bones."

Some characters of history would have a very unpleasant immortality. And some lesser men are remembered only by a criminal act done in a half-conscious moment when their true and reasonable self was temporarily submerged beneath the wave of a passion alien to their normal personality. And further which of us has fully expressed himself in his works? What artist has completely realised his soul? What craftsman has carried out perfectly the task which the Almighty gave him to do? So this theory must be held to be profoundly unsatisfactory.

Turning from the negative to the positive theories of survival we must first notice a semi-mathematical one associated with the name of Nietzsche, and believed by him to admit of rigorous proof. As the number of atoms in the universe (and therefore of their arrangements) is finite, though very large,

while the number of time moments is infinite, it necessarily follows that one of these configurations must recur. Time would be circular not rectilinear and would run back and fetch the age of gold. This theory of cycles is, of course, familiar to students of so-called esoteric or occult science. It receives somewhat contemptuous mention from characteristically exoteric philosophers like J. S. Mill. It was strenuously opposed by Bergson, who affirmed that the process of organism is irreversible, the present involving the memory of the past. My own view is that, so far as the accepted doctrine of relativity permits us to speak of a present moment at all, this moment must be considered as the aggregate or integration of all past moments (as in Bergson's snowball illustration) plus something just added. All past moments are really included in the present. In one sense the past must be annihilated ere the present can become. In another sense the illusion of the past having slipped away is purely psychological and due to our defective memory. Were our memory perfect, as no doubt it was in the Golden Age, we should have all the past with us and could relive at will any part of it in its full intensity. Many years ago Sir Robert Ball pointed out that, if we had a reflecting surface in a star 3,000 light years distant, and, of course, telescopes of sufficient magnifying power, we could see this earth as it was 6,000 years ago. The enterprising producer could manufacture and show a film of Paradise, and the thesis I here advance could be subjected to a stringent experimental test!

It is probable that everything that has been still is, and is theoretically recoverable. Every sound, for example, made by every inhabitant of the earth may be preserved in wave form somewhere in interstellar space. Nietzsche's mathematical demonstration is, however, unsound. It is sufficient to remark that space is a three-dimensional and time only a one-dimensional manifold, so that the possible number of atoms (not to speak of atomic configurations) in the former is infinitely greater than the number of instants in the latter. According to the modern 'granular' view of time, it is not a continuum at all, and the number of time instants in a finite period is itself finite.

We come now to the second positive theory. Eastern speculation has fastened upon reincarnation as the solution of the problem. At present quite a large section of mankind officially believes in the theory of successive incarnations. And there has for some time been a considerable current of western opinion veering in the same direction. Many modern enquirers, following the lead of Madame H. P. Blavatsky, are sympathetically disposed to the doctrine. It has tremendous pragmatic justification. Men and women who have passed the meridian of their present life (especially if they have not children to care for) find therein a sufficient motive for carrying on even under the most trying circumstances.

I shall first examine *a priori* possibility of reincarnation, and second the evidence offered to support it. First, then, what is meant by sameness?

Absolute sameness never occurs. We are not the same from day to day. New experiences arrive, others decay and almost disappear. But the change is continuous and gradual. So we say we are the same after twenty or thirty years, although our opinions and habits may have radically altered. The two usual marks of sameness are physical continuity and memory of the earlier in the later state. Now in reincarnation as ordinarily conceived physical continuity is lost. The same self appears at intervals with considerable physical gaps between. There is, perhaps, one just possible explanation. On orthodox Mendelian theory our bodies are made up—not so much out of an infinite number of infinitesimal as out of a finite number of 'unit' characters. As the number of combinations of these characters is necessarily limited it follows that individuals must tend to repeat very approximately the features of earlier individuals. This would, however, be likeness rather than identity. Identity consists rather in two stages of the same process. In fact, other fundamental ideas in theosophical doctrine stress this very process. The concept of Karma is that of the working out of a long process embracing many lives of the same individual. It is claimed that this concept has moral value, demonstrating a Divine justice inherent in the sequence of lives which is not conspicuously present in the single life. We enter our present life to work out the doom which our previous lives have necessitated. As I have already

said, the theory has great practical value for certain persons.

Secondly, there is a respectable amount of evidence from men and women who assure us that they can unearth from their subliminal consciousness memories carrying back to previous existences. These reminiscences, though possibly not distinct enough to convince a jury of impartial critics, are worthy of the attention of the psychic researcher. If memory were clearer, not isolated experiences but the entire past might be recalled.

Of course men of science accept the fact of racial memory. When children shrink in terror from being placed on a fur rug they very probably revive a dim memory of a time when man was engaged in a death struggle with a large and furry race whose embrace meant death. And when on the point of going asleep we have the illusion of falling, after which with a missed heart beat and a supernormal effort we pull ourselves together, we doubtless reproduce in memory the experience of falling from an insecure resting place upon the bough of a tree. The convulsive grasp which is purposeless in a modern bed was all-important for the more primitive sleeper. Although modern psychology finds a sufficient explanation of most dreams in infantile and pre-natal experiences, there is an unexplained residuum which must be referred to antecedent racial sources.

But it is scientifically heterodox to maintain that one individual reproduces the experiences of another or of a particular series of past individuals.

Is there any plausible theory which, while taking account of all the relevant facts and dealing in a sympathetic way with philosophical speculations, will yet satisfy stringent conditions of credibility? I venture to advance the following hypothesis. All past experiences of the individual are recorded and lodged in his unconscious mind. Since parents and child are physically continuous this record should include the experiences of all his ancestors in the line of direct ascent. Prior to the catastrophe, known theologically as the Fall, all the now unconscious mind was conscious. All the past records were open for inspection. The mental as well as the physical life of the parent was continued in the child. The doctrine that we live again in our children was literally true. The man or woman who had no child lost his or her immortality. First there was immortality of the individual, then of the family, no individual being lost. It is clear that if we could regain this complete consciousness our ancestors would reawake in us. The graves would give up their dead in metaphor but yet in reality. The child would, of course, be a complete personality psychically as well as physically. Is it too fanciful to believe that the mutual yearning of lovers, now only imperfectly expressed by mental and physical relations, was once completely satisfied when the two lives were blended and knit together in the child? Even parricide or matricide (a great blot, we think, upon the lives of the God-like heroes of myth) was no more a crime than is the destruction of an out

of date telephone directory when a new one becomes available. In fact the perpetuation of the race would simultaneously secure the preservation of the individual.

Then, as consciousness became partial and fitful, ancestral memories were only sporadically preserved. Such evidence as reincarnationists rely on is perhaps better accounted for in this way. A boy early acquires a desire to go into the navy. It is not necessary to assume that in his last incarnation he was a Viking or yet Blake or Nelson. It is more natural to think that some memories are stirring within him, memories of one of his own ancestors who was a sea-fighter. Under present conditions most layers of the unconscious are so deeply buried as to be completely inaccessible. But when we use such expressions as "He comes of a fighting stock," we tacitly admit the survival and potency of ancestral memories. The rush to arms in 1914 would be inexplicable apart from unconscious memories of past military glories.

We now reach the third positive theory, that of orthodox Christianity, which states dogmatically that death is followed by a discarnate spirit existence in two distinct realms of light and darkness or happiness and misery (sometimes with the addition of an intermediate state), followed by a day of resurrection, when the souls of the blest shall resume bodies perfected and glorified after the model of the glorious body of their risen and ascended Saviour. This consummation was to be attended with the coming of heavenly visitors from

the clouds. Now in passing I might say there is not the slightest reason why this devoutly expected event should not quite literally happen. There may be in Mars, or in another solar system, a race of beings who have advanced one step further than ourselves—from the conquest of the air to the navigation of interplanetary or interstellar space. At this very moment they may be planning the invasion of this earth in a civilising and philanthropic spirit, just as our missionaries of religion and civilisation have visited the less enlightened portions of our own globe. Angels' visits may be rare—even unprecedented—but they are not impossible.

But is such a discarnate existence possible? Has man a soul, as distinct from a body-mind? The soul is that which by definition survives death. If nothing survives the class defined is blank of objects. It does at first seem unduly arrogant to deny what tradition with almost unanimous voice affirms. The difficulty is, however, this. The soul cannot see or hear because sight and hearing are possible only through material organs, eyes and ears. No doubt in our dreams without assistance from material eyes and ears we often live a thoroughly colourful and variegated existence—sometimes too bizarre and noisy for our peace of mind. In fact dream life is often more intense than waking life. De Quincey's waking moments were dull intervals between the thrilling experiences of opium-stimulated dreams. And in general the dreamer's power of recalling past images is defi-

nitely supernormal. Persons awake from dreams in states of most exaggerated emotion—not always pleasant, but certainly not lacking intensity. The reason of this is doubtless that the engine races more merrily (or furiously) when the clutch is disengaged, so to speak, and the weight of the body taken off. So we are led up to the orthodox conception of the body as the charnel house of the soul, escaped from which she spreads her pinions and re-ascends to her ethereal home. Are not our moments of meditation, say, after waking from sleep when some train of thought or pleasant fantasy occupies our mind to the exclusion of external percepts among the most delicious of our existence? May we not say that the mystic in his phases of soul withdrawal not only touches the summit of human rapture but tastes an earnest of the joys which await his disembodied spirit?

Yet the stern march of truth must sweep aside even such a pious hope. For all these mental activities are simply functions of the brain cortex whose energising ceases with the cessation of life. With the destruction of the complex structure and the general deterioration which accompanies death the subtle inter-relation of brain cells which constitutes our consciousness is definitely dissolved. Great philosophers like Immanuel Kant declare that the soul is a 'simple substance' which cannot be destroyed. This, however, is an obvious confusion of ideas. The 'soul' is the capacity of the individual to participate in the infinite intelligence we call God. Now this intelligence is, of course,

by virtue of its very nature indestructible. But death destroys the mechanism by means of which we commune with that intelligence. How does it profit me, to take a somewhat trite physical simile, that the ether waves are still surging through space when my radio receiving apparatus is out of action because the battery has run down? And in practice the faith of Christian philosophers has too often crumbled when faced with the stark fact of death. In my own experience two clergymen who had administered with the deepest sincerity the orthodox consolations to other bereaved persons completely failed to find therein a blessed assurance of reunion with their lost ones in their own hour of desolation.

In fact, very little is affirmed by Christianity concerning this discarnate existence, and, *pace* spiritualists, nothing whatever is known about such a state. Spiritualistic phenomena seem to be due to the medium's uncanny power of getting in touch with memories of the dead as preserved in the unconscious minds of the living, rather than with the dead themselves. But with regard to a future material incarnation in a perfect body Christianity has undoubtedly raised a solid structure, though not, as elsewhere noted, upon impregnable foundations.

Coming now, in the fourth place, to the Graeco-Roman solution of the problem we find that their official religions recognised a vague or shadowy spirit world somewhat indefinitely located and which even the supreme wizardry of Vergil could

not make real. Medieval descriptions of purgatory are, no doubt, based on an early existent state of the earth's surface and had an obvious economic justification. But the Hades of the Romans is evidently derived from dream sources and from earlier conditions of existence described elsewhere in this book. It is well known that primitive peoples base their belief in a spirit existence upon the evidence of dream experiences. The savage in his dreams travelled far with the spear whose material self reposed in his tent. He therefore believed in its spirit duplication (really a psychical one), and hence concluded that all material objects possess immaterial doubles—the gist of the primitive philosophy termed animism. In actual fact every material object lives not merely a double but a multiple life, because every human being and every animal who has seen it possesses a copy. For the Roman whose religion was essentially primitive the soul at death retired happily or unhappily upon its accumulated store of memory-images to an inner house thus adequately furnished from past waking life. Achilles in the Elysian fields reliving his triumphs or Dido still wringing helpless hands over the departure of the Tyrian barques are but phantoms living in the underworld a life dim and shadowy as compared to the fuller and richer life on earth.

Besides this traditional eschatology there was a genuine attempt to fathom the deep mystery by the initiated who took part in rites like those of Eleusis. The methods employed were interesting and

valuable. The object was to produce in the votary a state of illumination or super-consciousness in which he was assured, among other things, of the fact of survival after death. "The initiate can never be unhappy again, the veil has been lifted from his eyes. He has seen, he knows."

It is now time to review briefly the theories which have been somewhat roughly and, I fear, inadequately sketched. The plain honest man will not unnaturally have concluded that the four affirmative ones are not satisfying to his intellect and the three negative ones to his 'heart.' There is not one of the seven which would command a majority of votes in the electorate of mankind to-day. There does, however, seem to be a kind of general presumption in favour of some form of affirmative solution.

Before proceeding to state my own theory I shall call attention to two kinds of evidence which seem to me to be the only data at present available. First, personal survival is affirmed almost unanimously by 'revelation.' Now revelation is simply composed of those ideas which have come with extraordinary force and vividness to the most gifted members of our race in privileged moments of their lives. Socrates, for example, came to a positive conclusion regarding the soul's immortality, and is represented by Plato, the typical Greek initiate, as affirming his faith robustly in the Phaedo and the Apology, but as supporting it by distinctly dubious arguments. I personally consider that the results obtained by these 'inspired' persons were

essentially genuine and veridical. In the absence of demonstrative proof we must trust the impressions received during our states of clearest thought. The fact that other senses are in abeyance is explicable physiologically, the total nervous energy being concentrated in certain portions of the brain cortex. The man of science often garners his most fruitful ideas during the semi-somnolent period preceding complete wakefulness. On my theory these states of illumination are temporary returns to the consciousness of unfallen man where immortality was just as much a hard fact as mortality is to-day. This blessed assurance or guarantee of deathlessness is, of course, the fruit of intuition, which may be defined as a mental process which guarantees a result without reference to the steps by which the result is arrived at. But there is little doubt that below the conscious threshold there are perfectly rational steps taken by the subliminal mind. For instance in mathematics a result often presents itself, to be followed much later by the train of reasoning by which it should have been consciously and was without doubt unconsciously reached.

The second kind of evidence is gained from child study. Children persistently refuse to accept death as part of their world view, and when confronted with the fact of death hourly expect the deceased's reappearance. I had recently to talk with a mental patient who through epileptic degeneration had regressed to an infantile mentality. Our conversation would proceed quite normally until I men-

tioned that her mother was dead. The reaction to this was absolutely negative. The patient resumed the conversation as after a tiresome and meaningless interruption. Even the normal adult says occasionally, "I can't realise that I shall never see so-and-so again." Apparently we here touch a mental stratum which was formed at a time when death did not exist. The older theology, which said that the Fall brought loss of eternal life, expressed a simple and literal truth. The opening lines of Milton's "Paradise Lost" are not only sublime but true.

It is curious how we expect great men to be immortal. I think the group around Socrates received a staggering blow when the cup of hemlock proved fatal. I remember in a formal logic class delivering a most impassioned harangue on the old Aristotelian syllogism:

All men are mortal,
Socrates is a man,
∴ Socrates is mortal.

Instead of being the extreme of banality, this fact that the great Socrates was subject to death was fraught with the most pathetic significance and made such an impression upon the young Aristotle that he embalmed it in our traditional logic. The belief in the immortality of Christ has been one of the most fundamental tenets of the Christian faith throughout the ages. In another part of this book it was shown on what flimsy evidence the proof of this great doctrine has depended, but

nevertheless we cannot in a light and airy way dismiss an alleged fact upon which countless writers have based our race's hopes of personal immortality. I have already noticed the proneness of men of the present and still more of the past generation, intoxicated by fresh knowledge, to attach no importance whatever to the ideas and beliefs of ancient thinkers of equal or greater mental calibre, simply because the latter were not in possession of certain facts and points of view which are, after all, more nearly related to the special sciences than to a general philosophy. "If Christ be not risen, then is our preaching vain." But seldom, if ever, was preaching more effective. Were its self-confessed foundations utterly rotten?

The theory advocated by me is that immortality has been a fact. As the Hebrew Scriptures and many other ancient records assert, man was originally immortal. The human organism originally possessed the power to rejuvenate itself and to perpetuate its existence indefinitely without resorting to the curious process of reproduction. The earth was once peopled by immortals, knowing neither death nor eld. As has already been remarked, the reason why some of the links in the chain of evolution are not represented in fossil remains is simply that organisms did not die, and therefore were not fossilised.

Then mankind lost the secret of life through carelessness or sin, and so death entered into the world. At first some were mortal, some immortal. The familiar mythological tales illustrate this. (Now,

as I observed in the folklore section, scholars have suggested almost every conceivable explanation of myth except the obvious one that it is true history. A well-known early thinker, Euhemerus, cut out the supernatural and allowed the rest to stand. In this he was followed by Polybius and certain Christian writers.) Gradually, we may assume, the number of immortals dwindled, as the godlike stock became degraded. Occasionally a royal family included deathless heroes. The phrase, "O King, live for ever," was no doubt once used in a strictly literal sense.

The truth would seem to be that personal immortality is just one of those things which we as a race have lost. Our hankering after it is explicable simply as that of the princely exile living in poverty who dreams of his former affluence. But is it therefore an idle dream? By no means. On one side we have the so-called 'materialist' who laughts at the hope of immortality. On the other hand there are the believers, who affirm that it is secured already, that all we need to do is to die in order to pass into an eternal world either desirable or the reverse. This assurance that Christianity gives of a present existing 'Father's house' of 'many mansions' is very comforting but quite untrue. If it were true we should be justified in adopting, as St. Augustine suggested in his 'City of God,' compulsory celibacy to hasten the end of the world. If there were a ready-made heaven with all its inconceivable glories awaiting us, to go on with our life here

would be the quintessence of pointlessness. We should be as foolish as a man who would take a long journey on a cold, wet and windy day mounted on a rickety push-bicycle with flat tyres when he might ride securely and luxuriously in a Rolls automobile. Yet the strong disinclination of the most intelligent and virile Christians to leave the miseries of earth for the felicities of heaven has been the standing occasion for scoffers at the faith to blaspheme, and compels the inference that there is something unsound about the orthodox theory.

And, in fact, between blank denial and dogmatic affirmation there is an obvious middle way. It is that immortality is neither on the one hand impossible nor on the other hand already achieved, but is dependent upon the future success or failure of our species. Were mankind to throw up the sponge, were we all in hopeless despair to commit suicide of our own or the next generation, the whole battle would have been lost. In a literal as well as metaphorical sense our immortality is in the hands of our posterity. It is thus explained how throughout past ages the most elaborate precautions have been taken to prevent the race dying out owing to the sexual instinct finding an infertile outlet. It is further comprehensible that nearly all religions have concurred in teaching the doctrine of immortality, though on a lamentably inadequate rational basis. Yet it is clear that the easy-going optimist's assumption that the solution of the problem does not require our strenuous co-operation may in practice be just as mischievous as the pessimist's

declaration that the problem is radically insoluble.

I repeat that immortality is just one of those things which have been lost. The regaining of it is bound up with the attainment of a high degree of knowledge and consequent productive skill. But if this knowledge is not acquired within a certain time the human species will vanish. It is a Marathon race against time. This knowledge must be adequate to the analysis and synthesis of the existing universe. Part of the work of chemistry is the synthetic production of substances which have been hitherto obtained only from nature. If we allow that the difference between organic and inorganic is merely one of degree, and that chemists have already passed at many points the line commonly drawn between the two, we cannot posit a lesser ultimate goal than the production of a synthetic man. The living cell manifests extraordinary complexity of structure. But there is no reason for supposing that this complication cannot in time be unravelled. The analysis is long but not infinite, the synthesis difficult but not impossible. Comparing bio-chemistry to-day with that of 100 years ago, we hardly dare to set any bounds to the advance of knowledge and power along this direction. It is obvious, of course, that sooner or later we must get down to bedrock and learn the secret of the mathematical construction of the electron. We must also be able to work on a cosmic scale and play with planets, as we now play with rivers in developing hydro-electric schemes. All this seems at present very far away. But probably man-

kind is assured of a further span of life of the order of a million years. And if the knowledge we have amassed during the past 1,000 years is even 1% of what is necessary, and if this rate of progress be maintained, the goal will be reached. As already pointed out, the essential distinction must be preserved between knowledge itself, which is infinite, and that amount of knowledge which is requisite in order to comprehend and construct the existent world of matter. This latter body of knowledge is finite, though large in comparison with that which we at present consciously possess. In the fundamental science of mathematics I should hazard a guess that perhaps 10% of that knowledge is now once again in our possession.

The real truth is that we must go forward and hand on the torch of life and of truth to our sons and daughters. We must make it clear to them that all human aims are subsidiary to the one aim of increasing human knowledge, and that he or she who does not directly or indirectly assist that aim is definitely a cumberer of the ground. Herein lies the answer to Sir Boyle Roche's famous query, "Why should we do anything for posterity? What, after all, has posterity done for us?" I, for one, hope that posterity will do everything for us. For, when the peak of scientific achievement, the construction of a human being according to arbitrary specification, has been scaled, those who have passed away can readily be re-created. Or, alternatively, four-dimensional space-time will be converted into objective reality and all that have been

shall live together eternally. Many generations have dreamt of the conquest of the air. In our generation it has been achieved. So will it be in respect of the conquest of death. Many choice spirits have in all ages dreamed of its realisation even in their own lifetime. "There be some standing here, which shall not taste of death, till they see the kingdom of God," was a striking piece of sublime albeit unjustified optimism. We no longer count absurd the medieval alchemist's idea of the philosopher's stone which would turn all metals into gold. Advance in chemistry is making it a reality. So will it be with the elixir of life. Metchnikoff's method of stimulating intestinal fermentation and Voronoff's success in transplanting interstitial tissue are partial and inadequate solutions which indicate that the complete solution is not such a long distance off. Sooner or later the last enemy shall be destroyed, not in any transcendental sense, but in the plain and obvious sense that man will cease to die. We shall then have justified the fearless and all-embracing scepticism which would deny the universal truth of that old stronghold of dogmatism, that irritating commonplace of text-books on formal logic, that threadbare theme of dull moralist and hysterical preacher, "All men are mortal." From the purely logical standpoint, indeed, no proposition is universally true save one whose contradictory is either meaningless or unthinkable. And human immortality is not only not unthinkable, it is the most fascinating of all themes for human thought. Assume it a fact. How life would grow in

interest! Every newly acquired faculty would be ours to develop through unending aeons. Life might be a struggle just as it is now, but it would be no meaningless or hopeless struggle. It is so easy to be patient if we know that all things are coming to those who wait, so easy to be unselfish when the good of others and of humanity is our good and we shall be there to enjoy it. If there is a hypothesis which will thus solve life's problems, it is our obvious duty as well as interest to accept it provisionally as true and by our action to help in making it come true.

I reiterate my objection to the orthodox Christian doctrine of immortality. It is simply that when the believer looks forward to leaving earth for heaven he forgets that the heaven he seeks must be built up by humanity after he is gone. For this reason common sense stigmatises the private pursuit of personal 'salvation' by the self-centred saint or ascetic as selfish and anti-social. There is a cheerful little story told of an English sergeant during the retreat on the Marne. Seriously wounded and asked by his chaplain, an earnest evangelical, if he was afraid to die, he replied, "Not afraid, sir, but ashamed—our fellows are in an awful hole, and I wouldn't like to desert them now." So our world is in an awful hole, and we mustn't desert it.

Yet the Christian religion has done noble and necessary work in keeping the average human being more or less content during at least part of the time required by the man of science to complete his

necessary task. It has accomplished the supreme feat of persuading man to endure the unendurable in the hope of better things to come. The theory that this life is merely a state of probation, though diametrically opposed to the truth, has often proved comforting and inspiring in practice. Even the moralist who has not advanced beyond the purely negative standard of goodness and whose horizon is bounded by the "Thou shalt not" of the Ten Commandments has exercised a preserving and stabilising influence upon society. The Christian churches must advance with the times, they must teach more of the practical idealism of Christ, if religion is to keep pace with science in the march towards the goal of everlasting life.

Further, the attainment of this goal will mean the perfecting of religion no less than that of science. Externally our race will go forward towards the reconquest of nature, internally towards the conscious reunion of the human spirit with God. Once again as erstwhile He will walk in the garden in the cool of the day and His children will feel no shame but an awed delight in His presence. The object of education, in Milton's famous words, "To repair the ruins of our first parents by regaining to know God aright" will have been achieved. The knowledge of and distinction between good and evil will disappear from human minds, never having been part of the Divine Mind. An earth made new will be ours, an earth wherein dwelleth righteousness. Love will again come down from heaven and lust go back to the hell whence it came.

But not in a moment or with a blast of a trumpet shall this change come. Brick by brick, stone upon stone, shall be built our enduring habitation. Not in flaming fire, not in frozen cold, shall this world end, but it shall abide for ever as the home of a redeemed and glorified humanity.

If my kind and gentle reader has forgiven me this somewhat purple passage (which would indeed have been more appropriate to the conclusion of a village sermon) he will perhaps complain that any such state of perfection would be extremely dull. When the last secret is wrested from Nature even the man of science must sit down, in all respects like Alexander of Macedon, with no more worlds to conquer. In the ideal world even the blessed exit from boredom through the door of alcoholic excess would be for ever closed.

But this is, of course, a complete misconception. When this world's sad mess has been cleared up we can start on our joyful way once more. (In more homely phrase, we shall resemble the maiden aunt whose intriguing occupation of knitting a pull-over for her extremely modern nephew has been held up by a perfectly exasperating tangle in the skein of wool.) Once again the morning stars shall sing together and the sons of God shout aloud for joy. In plain fact, the evolutionary process which has been tediously interrupted for some thousands of years will be set in cheerful motion once again. From dizzy but exhilarating heights we shall survey the virgin landscape of adventure. More life and fuller will crowd into our veins. We

shall be radiantly happy—tense with the excitement of the present or calm with the expectation of the future. All the joys unending which the devout Christian has expected in some indefinite world beyond the grave are to be looked for in this world made new, wherein death and the grave shall be but memories of an evil past. We shall have everlasting life—life prolonged indefinitely in duration, increased infinitely in fullness, ever rising higher and ever catching glimpses of still greater heights to be attained. Shall we count it a hard thing to raise the dead? Only posit supreme knowledge re-achieved by human beings and all is easy. The really expert mathematician, physicist or chemist could readily reconstruct one who has died, merely by putting together the same or equivalent protons, electrons, neutrons, or whatever turn out to be the ultimate particles. And in this new creation there will be no imperfection. We shall, indeed, have spiritual bodies, because our bodies will then be the perfect servants of our spirits. Our minds will be once again clothed in bodies adequate to all their needs, sinless, faultless, the perfect expression of the self once entangled in mortal clay.

So may it be!

(d) *Origin of Evil.*

In the preceding pages I have tried to show that to account for a large number of facts elicited by very diverse branches of human enquiry the hypothesis of a fall is necessary. It remains to ask,

What was the cause? Was it a physical or a moral one? Was there a moral lapse leading to physical degeneration, or a physical calamity bringing moral weakness in its train? There is a persistent and widespread tradition which stresses the moral factor, asserting definite culpability on the part of our race as responsible for all our woes. We can affirm on very high authority that sin entered into the world and death by sin. Yet it is impossible to place any specific sin in the dock and secure a verdict from an impartial jury. Sex fanatics will no doubt cite some form of erotic indulgence as the fundamental cause of deterioration. But sexual degeneracy seems rather a symptom of the disease than the disease itself. As already noted, Milton in his great epic pictures sex as present in Eden in a guiltless and beautiful form. According to the Hebrew Scriptures sin associated sex with guilt and shame, and further with conception and reproduction. It was after the Fall, too, that love's exquisite mutual surrender changed to the selfish and sensual rapacity of lust. Moreover, Paradise was lost not by a sexual but by a dietetic error. In point of fact, there is no doubt that over-indulgence in food and drink does cause the most rapid decay of the individual and the race. If we recklessly eat and drink we shall surely die to-morrow. Yet with a thousand more intriguing things to do, why should we concentrate on eating and drinking to the detriment of our stomachs and our souls? There must be a deeper fault. Actually these neutral—or rather normally

beneficial—physical appetites acquire a moral taint through their association with anti-social emotions. Thus arise blood-lust and sadism, producing those peculiarly unpleasant crimes for which middle Europe has in the past become unenviably notorious, and into which cruelty and sensuality seem to enter about equally. We are thus led to selfishness and hatred as the ultimate moral evils, a conclusion with which, I suppose, few sensible persons will seriously disagree. But here again we must ask, Why should I hate my neighbour? And at this point it is clear that we are compelled to quit the moral for the physical domain. Social psychologists say that hatred is an emotion developed in a competitive state of society or similar pre-social state. It is due to the simple circumstance that there is not sufficient food to go round. I do not hate my neighbour out of any wanton spite, but merely because his continued existence is incompatible with mine. It will be remembered by readers of W. S. Gilbert's spirited yarn that it was exactly this clash of interests which marred the perfect comradeship of the last two survivors from the wreck of the 'Nancy Bell.' Indeed, the upas tree of immorality has its root in a humble but fundamental and very urgent need. There is, and for a long time has been, a large number of wholly superfluous individuals. One of the tragedies of our world is the existence of those persons who should never have been. But once again, Why should there be this increase of population beyond the means of subsistence? Why this mad race to reproduce?

No doubt to make possible the process of weeding out on a large scale. And more fundamentally owing to the weakness and liability to death of the organism. The germinal cells, seeing that the parent ship is sinking, begin wildly to launch life-boats in all directions. I have already called attention to the significant fact that in the narrative of the book of Genesis birth succeeds immediately the expulsion from Eden. Parallel accounts in other ancient documents attest the dependence of birth upon death, and there are prophecies of a time when both shall together disappear. And present day eugenists justify their proposals to interfere with the right to reproduce by pointing to the dysgenic tendency of the weakest stocks to increase fastest. The proneness of consumptives to marry early and have large families is a typical example, and may be explained by the considerations suggested above. In certain conditions the senseless proliferation is matched only by the behaviour of cancerous cells in malignant disease.

But one step further, Why this organic weakness? Presumably it was due to some change of environment to which life was unable to adapt itself. The most obvious such cause would be extreme variation in temperature. Palaeontologists are agreed that life in general and the highest forms of life in particular received a very rude buffeting during the last ice age. The ice field at its maximum extended to the southern shores of Britain. Civilisation retreated to the Torrid Zone. At an earlier maximum the ice may have well nigh blotted out

life altogether. I pointed out in the psychology section that we are now scarcely one per cent. alive. Our race emerged from the bitter struggle against the cold with its faculties numbed and torpid. Or, again, during one of the interglacial periods our world may have got somewhat too hot for us. The surface temperature of the earth depends on at least three independent secular astronomical variations—the eccentricity of the earth's path relative to the sun, the slope of the earth's axis to the plane of this path, and the position of midsummer and midwinter in relation to perihelion and aphelion (not to speak of changes in the sun's heat and the earth's private thermal equilibrium). Hence it is inevitable that these maxima and minima should have occurred at irregular intervals (showing, however, a general periodic tendency) and with varying degrees of intensity.

Yet even this cause was probably not fundamental. Had its pristine plasticity been maintained the race which was reared amid inconceivably high temperatures when the earth was young would not have felt the comparatively slight interglacial heat. Nor would it have been troubled by a few degrees of frost. Indeed, the peculiar exhilaration we often feel in frosty weather goes to show that at one time our race revelled in perfectly Arctic surroundings. The lure of high latitudes, the call of the frozen wastes of snow, is still in our blood.

But our general organic weakness may be due to the universal deterioration of matter itself and the associated dissipation of energy already alluded to

at length in the section dealing with mathematics and physics. This seems to come nearer the ultimate truth. We all appear to suffer from a plentiful lack of energy. Scan the press advertisements and you find all kinds of prescriptions for refurnishing the vital store of our tired humanity. Hence arises the perennial temptation of stimulants like alcohol and tobacco. Give a man of the past generation a glass of whisky and he is happy—a temporary solution of an eternal problem. And we often smoke a cigar or cigarette as we arrange for a temporary overdraft at the bank. We are, in fact, obtaining an overdraft of energy.

Our world has broken down, like a car on a long journey. Is it lack of petrol which keeps us thus stuck in inglorious inertia—or is it lack of knowledge? No expert is on the spot. We struggle and strain, lose our temper and utter the horrible desecrating profanities of the physically feeble and mentally bankrupt. Were someone possessing deeper knowledge to arrive, he might make some simple adjustment. In a moment we should glide forward again, all our misfortunes forgotten.

Indeed, we must attribute our racial misfortunes ultimately neither to a moral nor a physical but to an intellectual cause, lack of knowledge. "This people perisheth for lack of knowledge," is an ancient and yet absolutely up-to-date statement of fact. For it is clear that if we had the knowledge there is even now an abundant store of energy lying about us sufficient for our present needs. Could a man of science disintegrate completely a

single ounce of matter he would obtain enough energy to keep him going for half a million years. It is clearly, then, lack of knowledge, not of petrol, which keeps us stranded. Of course, had we the higher knowledge enabling us to *make* the ounce of matter we should be set free for all eternity. But, possessing the lower knowledge, we should still be living on our energy capital—as we have done since the Fall—but no longer wastefully, as we are doing at present. We should still be spending, but no longer blindly and recklessly. According to a widely accepted cosmic theory due to the Abbé Lemaître, the already widely separated portions of our universe are drifting still further apart. The distant nebulae are receding at great speeds. If this be so we in this solar system may be like castaways on a lone island whose ship is standing out to sea. But, whether this process of physical isolation is real or not, it is abundantly clear that at present we are hopelessly cut off from the eternal source of all knowledge. "All mankind by their fall lost communion with God," declares a famous Puritan catechism. Only mystics, poets, artists, discoverers, who have enjoyed a transient and partial restoration of that communion know the magnitude of the loss.

Again we ask, How was this communion lost? Here is, indeed, a baffling problem. I would hazard the guess that there was a superior race who were in hourly contact with the infinite storehouse of knowledge. Through slackness, pride, or self-satisfaction they simply ceased to 'listen in' and

thereby increase their own finite store of wisdom. They were still, however, in possession of the secrets which we are now slowly and painfully winning back one by one from Nature and our own unconscious minds. These immortals produced an inferior race of persons to be their servants. "Let us make man," said they, "in our own image." To them they did not communicate these secrets. Adam was forbidden to eat of the 'tree of knowledge.' Upon them they imposed a kind of slave morality. They were commanded to be fruitful and multiply and replenish the earth. And we are the descendants of this inferior race. The superior stock was immortal and unfruitful. The celibacy of certain privileged classes to-day, such as the clergy of various churches, is a survival from ancient days. The curiously servile attitude which most people unconsciously adopt when suddenly confronted with those of much higher rank, the extraordinary conception of God Who is infinite mind as a kind of Egyptian taskmaster—indeed all the offensively anthropomorphic elements in religion—are evident psychological relics of this period of bondage. As time went on the knowledge thus withheld ceased to fructify in the minds of the holders. Like the priestly guardians of the sacred law in the days of Jesus, they entered not in themselves into the temple of knowledge and those that would have entered in they hindered. Finally they lost their immortality and died, and their knowledge perished with them. The persistent esoteric tradition that certain secrets of a particular nature have been lost

seems explicable only on the hypothesis that the general secrets underlying the world of life and matter have been allowed to slip out of human possession. It is strange that even now we shrink from putting our children at the earliest moment in possession of all that our acquired knowledge and personal experience has taught us about life. We unduly delay the time when the heir of all the ages is permitted to come into his sadly attenuated inheritance. In this respect the past generation failed signally, and hence their eternal reproach. I personally recollect spending five years in a shamed and furtive search for knowledge which might have been given me in five minutes. Of course sexual ignorance is but a drop in the river of forgetfulness which has submerged all the most precious parts of our intellectual heritage. The result is that age has now very little of vital importance to communicate to youth. Yet the pathetic hunger of the child for the kernel rather than the husk of knowledge and the extravagant hopes which every young person, until disillusioned, cherishes with regard to his initiation into the various phases of adult activity seem to indicate a very different state of affairs as obtaining in the not too distant past.

(e) *Aesthetics and Ethics.*

The long analysis contained in the preceding section has led to the conclusion that the root cause of all our woe is the loss of a definite body of truth. There are three traditionally ultimate categories—beauty, goodness, truth. And the greatest of these is truth. It remains to frame a satisfactory theory of the nature and mutual relation of the members of this august trinity. Such a theory demands once more the postulation of a state of relative perfection in the past, as I shall now attempt to show.

Aesthetics, or the science of the beautiful, is notoriously difficult. Sometimes we are inclined to make beauty depend on mere authority. What the expert calls beautiful is beautiful. So in the ethical sphere, instead of defining the good man as him who does what is good, we may define good as that which the good man does. This is to a large extent the position of Christianity and of hero religions and hero worshippers generally. Though of great practical value as setting up a concrete model for imitation, this procedure cannot, of course, be regarded as satisfactory in theory. It does not in any way give a complete account of the matter. And in the logical sphere we have long since ceased to define truth as that which the master says, whether that master be Aristotle or Jesus of Nazareth or the head of any esoteric

fraternity. Yet Aristotle was the master of those who know, and the anagrammatic answer to Pilate's question, "Quid est veritas?" (What is truth?), "Vir est qui adest" (The man who is here), has a profound verity of its own. And there have from time to time arisen men (and women) of such penetrating intelligence as to justify their followers in exalting them into infallible canons of truth, or more mystically in identifying them with Truth itself. Most of us now hold that there is no such thing as Truth with a capital T, but that there is truth with a small t and falsehood with a small but quite definite f. And we judge this truth not by a personal but by a logical criterion. The ultimate test is that of self-consistence. The false is that which suffers from internal incompatibility, which when subjected to a really relentless cross-examination of the Socratic type can sooner or later be made to yield a contradiction in terms. A provisional and more popular test of falsehood is, of course, that of incompatibility with well ascertained facts. The Newtonian hypothesis, for example, is false because it is inconsistent with the observed rate of turning of the apse-line of the orbit of the planet Mercury. Metaphysicians asserted that it was inconsistent with itself, and therefore self-refuted. But the plain man is interested in facts. And the metaphysicians were unable to adduce a single fact inconsistent with the theory. So they were heard only by the select few. Further, they had no sounder theory to put forward. So their criticism, though valid, was merely destructive.

It was left for Einstein, not only to provide a new theory, but to devise a number of crucial experiments which had the result of discrediting the older theory alike in the eyes of the physicist and the man in the street.

To return to the sphere of aesthetics, we may in practice accept the dicta of great aesthetes and artists or the judgments of men and women of cultivated taste, just as in ethics we respect the maxims of saints and sages or the decisions of the conscience of the average decent citizen. Yet we clearly cannot regard this as furnishing a theory of beauty. We have to fall back on the orthodox theory that beauty is the degree in which an original purpose or design is realised. When this design is interfered with or frustrated ugliness is the result. For example, the branch of a tree is prevented from growing straight by the proximity of a wall, and is constrained to turn at right angles to the direction it would have taken had it been free and unconstrained. Now the branch is a perfectly good branch, contains sound timber, produces normal foliage and fruit. Yet the original plan has been interfered with, and the outcome of this unintelligent interference is definite ugliness. On the other hand, a fruit tree intelligently trained to assume a perfectly regular pattern which is foreign to its nature possesses a beauty of another kind. A slightly bent line or faintly distorted square is similarly judged ugly because the draughtsman is assumed to have set before himself an elementary ideal of straightness, equality and perpendicularity

which he has failed to realise. It is this want of achievement which we denominate ugliness. The simplest geometrical form, the right line, has its beauty in the straight garden path, drill of celery plants, or trimmed hedge. Any unintentional deviation from rectilinearity is unbeautiful. But, when the landscape gardener substitutes for the straight line a curved line in which the curvature follows some definite principle as in an elliptical flower bed, we apprehend a more subtle and complex purposiveness, and therefore a higher type of beauty. An irregular shape offends our aesthetic sense because we suspect that behind it there lies no intention whatever. The shapes designed by Nature are generally too complicated for us to understand. Yet we are willing to judge them beautiful because we believe there is a definite purpose and design underlying every natural form. Were it otherwise, and had Nature grown up through the more or less accidental preservation of random and indefinite variations, as Darwin suggested, we should turn away from her as from something revoltingly ugly. The modern cubist movement away from nature towards geometrical form shows, however, that we tend to admire simple patterns which we can understand and mentally resolve rather than more intricate patterns whose design we cannot unravel. We find even relatively crude geometrical decoration more satisfying than the representation of flowers and trees. Curves are replaced by straight lines, rounded by polyhedral boundaries. The obvious sacrifice in

fidelity of representation is compensated for by satisfaction in a fully apprehended design.

We have just seen that there are two tests of truth—the higher, which is consistency of the idea with itself and with other true ideas, and the lower, which is consistency with fact. So are there two tests of beauty. The lower is that of literal fidelity to nature, of the faithful representation of animate and inanimate forms which Nature has actually produced. This was the art beloved of the British Royal Academician of a past generation, and is still the only art which makes a wide popular appeal. But the higher test of artistic beauty is that of fidelity to the idea or purpose in the artist's mind. It is satisfied by the representation of a human face with its features distorted by some powerful emotion. It is satisfied—in the judgment of his disciples—by all of Mr. Epstein's sculptures. Most of us are somewhat low-brow in this matter. We abide by the popular criterion of art. We cannot take any pleasure or apprehend any beauty in the realisation of an idea which takes us too far away from nature. Yet from the higher standpoint art consists not so much in a mere copying of nature as in working along the same lines as the creative artist who made nature. The working out of an idea—that is the essence alike of nature and of art.

Science, indeed, consists in educing the idea from the concrete object, art in producing the object from the idea. When the idea or principle underlying a material object is correctly elucidated we get scientific truth. And when an object is constructed

in accordance with some idea or principle we get artistic beauty. As a thorough-going rationalist I cannot admit that into the production or apprehension of what is beautiful there enters aught but the intellectual. Those who posit a non-rational factor in aesthetic appreciation merely mean that the underlying rationality has not been clearly grasped. "Beauty is truth, truth beauty," is a literally accurate statement made by a supreme artist in language (though sometimes explained away as poetic wantonness). In the psychology section I tried to show that emotion (such as is aroused by the contemplation of beauty) is really thought or reason which is unable to force itself into clear consciousness. And at present good artists of whatever kind are waging war upon the irrational, upon unreason itself. In music the 'sentimental' song of the Victorian drawing-room is condemned, not because it was simple, but because it produced a vague effect which could not be analysed. Feeling divorced from thought (and, of course, from action) is the essence of that sentimentality which is justly stigmatised as definitely a bad thing.

It results from this discussion that ugliness or lack of beauty in the world around us, of which there is an almost infinite amount, is the degree in which each structure falls short of the original design. This design is intellectual, though beyond our present comprehension. But it does not merely exist in our unconscious mind or in the Eternal Mind—it was actually realised at some previous point of time. When Plato alleged that the soul

recognises beauty through its acquaintance with the archetypal forms he spoke even more truly than he himself, perhaps, knew. For in our racial consciousness we retain some dim memory of these perfect originals, and we ache to behold them once again. When the archaeologist finds a chipped and battered marble figure he infers that the statue, perfect and undefaced, existed not only in the sculptor's brain but in the world of reality. So any tenable theory of ugliness presupposes a disfiguring process which has marred an originally perfect creation.

Coming now to the sphere of ethics, we shall see that the doctrine of a past sudden catastrophe throws an interesting light upon the problem of evil or sin. Evil is best defined negatively as lack of perfection, sin as a missing of the mark. In modern times sin tends more and more to become negative in character. Occasionally violent passions break out with devastating results, but in general our fault is lack of positive excellence. The curse of modern life is its sheer futility. Few subjects have been more earnestly discussed than the theory of good and evil. It is now, however, generally recognised that ethics is not a science in the same sense as mathematics or chemistry or even economics. At one time it was considered sufficient to define right simply as that which the Divine law commanded, and wrong as that which it did not permit. The first objection to this definition is the absence of unanimity in respect of even one single precept of this divinely ordained moral code. All

men everywhere and in all times seem to have believed in a higher power or powers, but not that He or They enjoined or forbade the same things. The sanctity of human life and the obligation to speak truth are, perhaps, most universally respected. But all primitive communities regard human life as valueless in comparison with the safety or even the advancement of the herd. And certain medieval codes of chivalry esteemed death as preferable to dishonour for male or female, while ancient Spartan and modern schoolboy have applauded as a hero him who can depart from truth but adhere to verisimilitude on certain privileged occasions. Great civilisations like those of China and Greece regarded infanticide with complacency and the destruction of the unfit infant with approval, while modern sentimentality has been criticised as going too far in prolonging lives which are painful to the individual and useless and burdensome to society. In sexual morals the widest diversity has prevailed. Celibacy, monogamy, polygamy (savage, patriarchal, Mormon), polyandry, promiscuity, group marriage have in turn been extolled as the highest virtue, while the Olympic and other widely venerated deities have dignified even incestuous and bestial relations. Religion has been associated indifferently with the practice of asceticism and with orgiastic rites. Some modern observers assert that the morals of youth have even within the past twenty years undergone a complete revolution.

The second objection is that no alleged divinely appointed code is absolute or independent of human

weakness. Aristotle affirms that the golden mean in conduct is negatively determined by human inclination, being further away from the vice to which human nature is more inclined. St. Paul says that without the law he had not known sin. But we might say with even more truth that without sin we had not known the law. If our frailties were diametrically otherwise we should obviously have had an exactly opposite series of commandments. Thou shalt not be tied to thy mother's apron strings; thou shalt not abhor the lethal chamber; thou shalt not be a Darby or a Joan; thou shalt not give thine own goods to another; ye shall not form a mutual admiration society; worker, in thy filthy tenement thou shalt not forbear to covet the capitalist's mansion—so the second table of the Hebrew decalogue might have run.

What, then, is evil, and what is sin? It seems to me that there must have been a time when sin was not morally but physically impossible. You couldn't, for instance, commit murder for the obvious reason that you were surrounded by immortals. Your homicidal efforts would be as unavailing as Aeneas trying to slaughter the shades in the Vergilian underworld. His sword passed harmlessly through their tenuous bodies. At present sin is made possible solely by human weakness. You come in late at night and disturb your neighbour. That is a sin because he is too easily waked, and can't settle down to rest again. If only he were a sounder sleeper, or a superman like Napoleon I, who needed very little sleep, no harm would have

been done, and therefore no sin committed. "*Cui malo?*" we must ask before branding any action as sinful. But still less could you offend by word, because your audience was then mentally invulnerable. At present most persons have morbidly sensitive areas in their minds—traumata, the scars of past wounds. A chance remark or harmless jest becomes sinful because it impinges on that sore spot and therefore hurts. You cannot tread upon a man's corns when he hasn't any. You could not injure others. But neither could you injure yourself. The healthy man cannot overeat, for when he has had enough his appetite ceases and his attention is turned to a new source of satisfaction. Moreover, in the case of the unhealthy man it is futile for the moralist to ask whether he has eaten too much or too little. In point of fact he has eaten *both* too much and too little—too much to avoid overtaxing his digestive system, and too little to replenish his tissues and furnish him with adequate heat and bodily energy. The same is true of drink, particularly alcoholic drink. The weak man consumes too little stimulant to arouse his latent faculties, and yet more than enough to paralyse special muscular and inhibitory centres. Or, to take another example, nudity could not offend where every youth was an Apollo, every maid an Artemis or an Aphrodite. It seems tolerably clear that the lowest vices are really what would be (and doubtless were) under happier conditions the sublimest virtues. There is, perhaps, no urge more unpleasant and apparently more vicious than the desire to embrace

a corpse. And yet it was probably connected with the resuscitation of the dead, as when the Hebrew prophet Elisha is said to have used this means to restore to life the son of his Shunammite hostess.

From the theoretical and absolute standpoint evil is pure negation, as the greatest philosophers have realized. Ethics is, then, in no sense an absolute science. But it is a practical compromise which our present unfortunate (and, as I maintain, fallen) condition demands. Two mistakes of an opposite nature are commonly made. One is to represent our morality as an unalterable and divinely appointed code. The other is to flout and jeer at all morality. As well might one mock a one-legged man hobbling along the road. His progress is slow, painful and inelegant, yet eminently deserving of a cheer. But one-legged progression was no part of the original scheme of things.

Of course there have from time to time been many crude and unworthy attempts to bolster up this theoretical deficiency in ethics. Weird supernatural or cruel political sanctions have been invoked. Dualistic systems of metaphysics have been invented giving the devil a place alongside of God. No doubt the devil of medieval times, complete with horn and hoof, was quite a pleasant fellow, possessing inexhaustible comic possibilities. But viewed tragically he was the damnable fabrication of those who trafficked in the bodies and the souls of men.

In all ethical discussion the ultimate distinction which emerges is that between absolute values in

the ideal state which according to the present theory obtained at one stage of evolution and will again be re-achieved, and values relative to that very unideal state in which we temporarily find ourselves. The practical defect in an exclusively scientific world-view is that, strictly speaking, it applies only to the former state, just as any particular science like mathematics deals with an abstract and ideal world. It has often been remarked that the predominantly religious interpretation of the universe current a hundred years ago produced a more stable type of character and more satisfactory conduct than the scientific interpretation which has supplanted it. It has even been asserted that, while in the last century the fight was between science and religion, in the present century the fight is between science and morality. The radical difference in the two view-points is their respective valuation of pleasure and pain. There is little doubt that, just as the practical result of scientific advance has been to make possible the pursuit of pleasure by everyone instead of as heretofore by only a privileged few, so the theoretical result of the same advance has been to place a higher value upon pleasure itself. For pleasure is simply the report to consciousness of function successfully performed, pain of the reverse. Is not successful functioning in itself good? Hence the ready and obvious justification of hedonism. So the present tendency is to avoid pain. This tendency leads to 'soft pedagogy'—allowing children to do as they please. The ideal in education has become the

'pleasurable absorption' in his work of the Montessori child instead of the sweat and tears by which knowledge and insight were erstwhile attained. Discipline and self-control have been assessed at less than their true value by the present generation. The sterner virtues have been almost lost. And weaklings have been sent out into the world to do the work of heroes. Every day the most roseate lies are broadcast from advertisement posters—concerning drugs which can relieve all pain, vitamin-containing foods which can produce and maintain robust health. Whereas in the past typical religions like Christianity have declared that pain and suffering are the natural consequences of our present fallen condition, and cannot be avoided. Pain is even the characteristic line in the life-spectrum of the choicest members of our race. Whom the Father loves He chastens. Those without chastisement are bastards, not sons. Which of the two verdicts is nearer the truth? Apparently the latter. The faces of men of genius are scarred and pitted with pain. The religion of suffering brought the world more or less safely through many trying times and helped in building up the stable Victorian civilisation. While modern hedonism has in our generation achieved what? A world war with a maximum of coarse physical misery. A post-war chaos with the most exquisite mental torture based on financial anxiety and insecurity.

Crises like the late European war and the present financial impasse are sometimes referred to trivial

causes—Germany's invasion of Belgium, the hoarding of gold by France and America. Whereas both were fundamentally calls to a world which was growing dangerously weak-kneed and slack. In 1914 the gilded idler felt the call of King and Country, or of Emperor and Fatherland. In 1931 the man who defied his priest and his physician came to heel at the bidding of his bank manager. Behind our superficial hedonism there is an obscure but fundamental conviction that if the luxury born of scientific advance makes our civilisation go 'soft' we are irrecoverably lost. The moving finger is writing upon the gilded palace walls our irrevocable doom. The traditional public school spirit, the lust for perilous sport and adventure, the devotion of the research worker in dangerous fields, all these are, like the Pauline injunction to endure hardness, expressions of recognition of a primal necessity. If the increased productivity of the modern machine makes it possible for millions of human beings to live an easy and irresponsible life, then humanity's deepest instincts will conspire to prevent the coming into being of this insidious millennium. So the present distress may not be curable by any political or economic panacea. Its roots extend much deeper owing to the fact that such stress and strain seem to be necessary constituents of the air which our fallen race must breathe if it is to survive at all.

Of course there is a bewildering variety of theoretical solutions. There are charmingly unorthodox systems of distributing universal credit, just

as there are naïve yet wholly delightful schemes for ending war. In theory the idealist is right all the time. His arguments are quite unanswerable. And idealism is justified by the practical incentive to action which it provides. It may, from the pragmatic point of view, be better to espouse a hopeless cause than to espouse no cause at all. The insane and uncompromising idealist is, however, a dangerous lunatic and public enemy, and should be shot at sight. In the matter of universal peace and credit facilitation even the idealist feels that he is moving in an atmosphere of unreality. At present it is painfully evident that the old vicious circle of international jealousy, secret diplomacy and piling up of armaments is beginning again. Embittered economic warfare is everywhere in evidence. Economic policy since the war has been selfish, retrograde and absurd. Each nation appears to cherish the fantastic hope of being able to produce all its necessaries at home and at the same time find a market for its surplus produce abroad. As regards the trade slump the only hope the hard-bitten economist permits himself is that in the next boom the world will not lose sanity completely in the matter of reckless over-production.

The loss of confidence and more or less general financial deadlock which put an end to these boom periods are fully explicable only by considerations of a specifically moral nature. It is just as true now as it was nineteen centuries ago that a man's life consisteth not in the abundance of the things which he possesseth. Still less do material goods

exist in order to make profits for the producer or to fill the columns of the statistician. What is merely the means to an end is sometimes taken as an end in itself. Nor do goods exist to glut the greed or ambition, or satisfy the passing fancy or the depraved taste, of wealthy consumers. The fact that a man desires something and has the money to pay for it gives him no moral title to its possession. It is at this precise point that economics and ethics come into collision; and the former must give way. No man has a right to acquire anything which he does not require and of which he cannot thoroughly make use. The neglect of this principle has supplied the driving force behind the myriad forms of modern attacks on capital. Now the general financial trend of the past few years has been a roundabout and clumsy but by no means ineffective method of enforcing this very principle. We have learned to cut out a number of things because we can no longer afford them. And we are all the better for this self-denial.

Of course in theory judicious expenditure is the ideal. Consider the difference between the conduct appropriate to the man of unlimited means and him whose purse is slender. The one buys only the best. Yet his apparently wasteful expenditure masks a deeper economy. And he alone can put the consideration of public utility before his own. He can, for example, travel in the relatively empty first-class coach, thus making the best use of the accommodation provided by the railway company. Whereas the other must buy an inferior article,

must study trivial and ultimately wasteful economies, must crowd into the already over-filled third-class compartment—because his actions are determined by his private financial stringency, so that he cannot afford to take the longer and the wider view.

But according to the thesis presented in this book we are all living on a very slender capital of physical energy. There is no yet known means of augmenting this capital. There are a thousand only too well known means of drawing upon it. Morality is in most cases the prosaic task of making ends meet. We forgo many alluring things for a similar reason to that which compels the impecunious subaltern to eliminate hunting from his winter programme. Pleasure, which is in itself a good thing, becomes an evil because the very perfection of functioning which it implies on the part of certain organs and faculties consumes too much of the total energy available for the use of the whole. If we regard the organism as a society we must condemn pleasure as anti-social. Our theory shows also the reason for the existence of pain and justifies the attitude thereto of the great religions of the past. There is at present something absolutely and fundamentally wrong with the world as we know it. Until that fault is repaired pain is a necessary concomitant of sentient existence. Temporary escape—unless in special circumstances, like illness—by the use of narcotics or stimulants or distractions is both futile and mischievous. Permanent escape is as feasible as stemming the tide

with a pitchfork. The employment of the more delicate and powerful analgesic agents which modern research has put at our disposal merely amounts to using a fork with four prongs instead of two. Pain, indeed, which is an absolute evil, becomes a relative good, because we know that our misfortunes are being honestly faced, and not postponed to strike us later with accumulated and irresistible force. Just as we minimise the kick of a rifle by holding it close to us and taking the shock with the whole body, so can we best endure the shock of life by standing up to it and taking the impact equally at every moment.

Pain is, therefore, something to be actually embraced. Were it otherwise how could the cross which the founder of Christianity offers to his followers have been so generally accepted? Were it otherwise St. Paul, who rejoiced in tribulation, should have been shut up in a madhouse. Were it otherwise the New Testament of the Christian faith ought to be publicly burned. A time will come, indeed, when the New Testament shall be a book outworn. But that time is not yet. For, as the revelation of Moses contained the fundamental theoretical doctrine of a fall of man, so the revelation which came by Jesus Christ contained the fundamental practical doctrine of the necessity and value of human suffering.

It remains to ask the supreme question of personal ethics. Seeing that these things are so, what manner of persons ought we to be? For us moderns which is the last and great command-

ment? To live strenuously. To do and to suffer. To despise inglorious ease and passive pleasure. To reckon no hour as worthy which has not held the cup of sorrow and given the baptism of pain. To count better the demon of acute suffering than the devil of apathy, depression and despair. To hold the road, knowing it winds uphill all the way. To seek for nothing except the stern joy of the struggle. To keep a sense of humour and break out from time to time into a healthy laugh at our own weakness in the face of the iron tyranny of circumstance. To hope for and believe in a glorious future for our race in which we shall share, but which depends for its realisation upon the efforts of ourselves and others. To feel that the occasional gleams which irradiate our path are but an earnest and a foretaste of a coming perfect day. To look forward to a transcendental reward far above anything eye has seen or ear heard or which it has entered into the heart of man to conceive.